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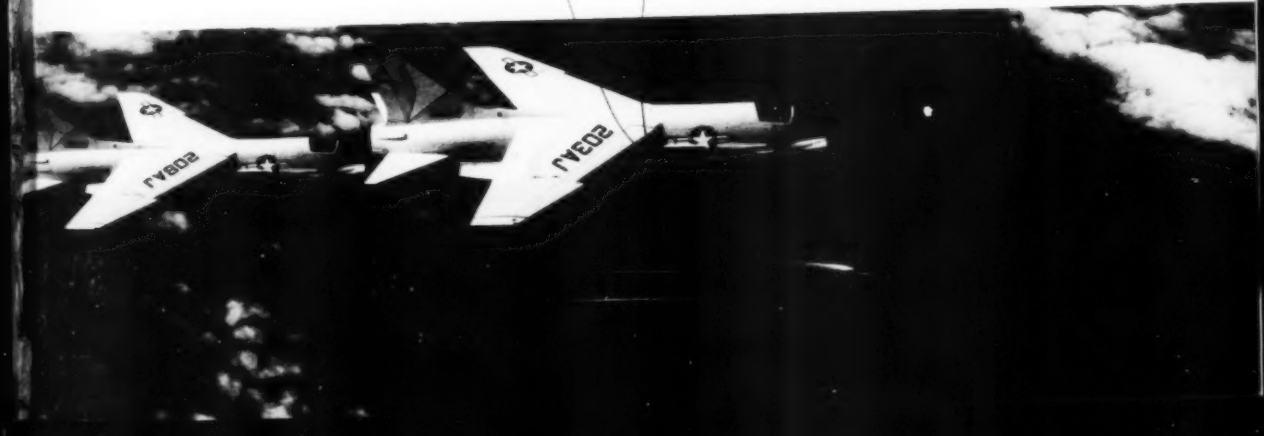
CNO AVIATION SAFETY AWARD WINNERS



"It's not the cautious, the timid, the slow-movers who are the safest. It's the fellows who inject intensive indoctrination, training, supervision and esprit de corps into their operations and then go out and do the job who go on record as the safest outfit in the bunch."—
MAG(HR)-(L)-26— ***"The Main Transmission"***

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CNO AVIATION SAFETY AWARD WINNERS 1960

IT IS a real pleasure to dedicate this issue of APPROACH to all who are playing a successful part in reducing naval aircraft accidents.

A special word of praise is in order for those officers and men of the squadrons and ships which won the coveted 1960 Chief of Naval Operations Aviation Safety Awards, and the Admiral Flatley Memorial Award. Congratulations are in order, too, for the many, many units who again flew accident free in FY '60.

As you may know the naval aircraft accident rate was cut 25% last fiscal year—and the carrier accident rate 43%. These are solid accomplishments of which we can be mutually proud. But the cost of accident losses is still staggering, and must be further reduced. Keep up the good work!

W. O. BURCH, JR.

ACCIDENT RATE CUT TWENTY-FIVE PERCENT!

THE All-Navy Aircraft Accident Rate for Fiscal '60 has been reduced to 1.9—a 25% improvement over Fiscal '59, the best previous year on record.

Carrier based air operations increased 13% while the carrier accident rate was lowered 43%. Fleet units of the Navy and Marine Corps are to be congratulated for this impressive accomplishment as well as the reduced overall accident rate.

AirFMFPac, which showed the largest general improvement of any major command, lowered their rate from 3.7 to 2.1. CNA-ResTra achieved the lowest rate of any command, 1.3, with CNA-Tra running a very close second with 1.4.

While the total cost of aircraft accidents was reduced this year to 266 million dollars (14½% less than FY '59) the average cost per accident rose to $406,000—more than double the cost per accident five years ago. One hundred fifty-six fatal accidents occurred and caused the death of 272 officers and men. Rate-wise this is only an 8% improvement over the Fiscal '59 fatal accident rate. This continued loss of men and aircraft has a serious detrimental effect on readiness and must be countered with every means at our disposal.

Personnel error represents the largest single area for correction. In many cases accidents have been due to inadequate supervision—often these accidents could have been prevented by the promulgation and enforcement of standing operating procedures.

Material failure or malfunction continues to be a major accident factor, contributing to 41% of all accidents during the year. Approximately one of every six accidents, or more than 16%, was due to material failure of the engine, while landing gear troubles accounted for 8% of the total number of accidents. An additional 10% of all accidents to first line carrier jet aircraft involved some part of the fuel system as a cause factor.

If losses due to material and maintenance causes are to be reduced, increased efforts by the Technical Bureaus and Industry are a vital necessity for providing optimum original design, detecting problems, and providing immediate fixes for "in service" equipment. Operating activities can assist Bureaus and Industry in reducing these accidents by providing *effective* maintenance *quality control* programs. Such programs must include inspection procedures to detect *and report* material defects found in present equipment. Losses can be reduced further by operating activities through earliest possible incorporation of approved service changes and bulletins.

Naval aviation cannot afford the high cost in lives and material caused by aircraft accidents. Substantially safer operations have been conducted as evidenced by the all-navy rate of 1.6 in December 1959 and the ComNavAirPac rate of 0.9 in April 1960.

Why Was FY '60 Better Than FY '59?

Many specific precautionary and educational measures were taken over the year and it's almost impossible to determine which ones were the most effective. However, some which undoubtedly contributed to the reduction of the accident rate are:

1. Increased emphasis on replacement training at the fleet level.

2. Product improvement in jet engines.

3. Increased emphasis on better overhaul and repair procedures for reciprocating engines.

4. High visibility markings on non-combatant type aircraft.

5. Increased appreciation for personnel fatigue problems.

6. More positive action concerning wheels-up landings. This includes service changes, some new procedures and lots of supervision.

7. Intensive educational program on landing technique. Such as: use of angle-of-attack information during the approach and runway supervision by well qualified runway duty officers.

8. Improved methods of detecting incipient engine failures by use of magnetic plugs in the engine oil system and spectrographic analysis of engine oil.

9. Increased emphasis on, and use of, field arresting gear.

10. Increasingly detailed and thorough accident investigations coupled with follow-up action on causes.

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WHAT ARE THE PROGRAMS FOR IMPROVING SAFETY IN FY '61?

It seems likely that additional improvements in FY '61 may require major changes in methods of operation. Further positive steps must be taken in the accident prevention program. Principal among such steps are these recommendations now being evaluated:

1. Establish, promulgate, and require strict adherence to standing operating procedure. This will have to eventually be an all-hands action but as of now the Center and various fleet activities are working on the program.

2. Develop additional means of educating pilots to augment current safety publications. To this end the Safety Center is producing taped presentations for each squadron which will discuss their aircraft and its associated problems. Also increased emphasis has been given to the production of realistic training films on safety.

3. The magnetic chip detector has been remarkably successful in several of our aircraft. We believe this equipment should be installed in all recips, and even several jets. The Bureau of Naval Weapons has been pushing the program but it should be enlarged even more. Spectrographic analysis of engine oils falls into the same category. This program presently calls for additional installations, but the whole program shoud be stepped up.

4. Pilots assigned to high performance aircraft not only must be good pilots, but they must also be motivated. Too often, nothing is done until an accident occurs to discover that the pilot was marginal, lacked confidence, and was dissatisfied with a certain type flying. The Bureau of Naval Personnel has done much in recent years to alleviate this problem but it still exists.

5. The greatest contribution, of course, would be the attainment of a reasonable level of personnel stability. The programs initiated already will help considerably especially after they have been given time to become established.

THE FY '60 safety record is your story.

You wrote it, in fact you even supplied the pictures used in this your Winners Annual issue of APPROACH.

But more important than these words or pictures are the total impact of your efforts in behalf of the naval aviation safety program.

The operational readiness of the Navy is directly affected by the degree of success of the naval aviation safety program.

The recent decision to add one carrier and air group to the Pacific and Mediterranean fleet, respectively, was made possible within existing forces partly because of the aviation safety effort. The improvement in the accident rates over the last two years also made more than 200 aircraft and nearly 100 pilots available for deployment which otherwise would have been lost if the previous year's rates had prevailed.

This is convincing evidence of the value of a program of aviation safety aggressively employed at all levels of command and operations.

These comments are an indication of the headway you have made during the past fiscal year in increasing the safety of naval aviation.

Now, let's have a chat with some of the year's winners and runner-ups and review some of their methods for safe operations.

VMA-121 started the fiscal year with the publicly avowed intention of winning the CNO award. The successful achievement of this goal resulted from the personal effort of each member of this A4D squadron.—Winner, VMA(Jet)

Capt. M. O. Wright, LSO, briefs (left to right) Capt. C. W. Dodson, USAF exchange pilot, Capt D. G. Keast and 1st Lt. W. R. Schrader on the entry to a carrier break. Such thorough briefings aided VMF-323 in securing the runner-up Award in the VMF/VMF(AN) category.

WINNERS

Winner, VMA(Jet), AirFMFPac

VMA-121

WE have used the CNO Safety Award itself as a tool in achieving our present safety record. It started this fiscal year with the publicly avowed intention of winning this award. It has made the winning of this award the personal responsibility of each pilot and each member of this A4D squadron.

Total time, accident rate, and current safety points appear on the daily flight schedule. Other competing squadrons were watched closely through Weekly Summaries, and published compilations. A flag pole was constructed to fly the pennant.

The award itself is considered

RUNNERS-UP

VF-14

Repeat Winners

he following squadrons also
on the CNO Award last year.

F-14 VF-727 VA-672
MRL-361 USS THETIS BAY

Weekly inspection of VF-14 aircraft being conducted by LTJG C. C. Williams and assisting plane captains is indicative of the outstanding preventive maintenance program which helped in winning the VF(AW) Award. (L-R) J. W. Duff, ADJ3, LTJG C. C. Williams, and R. B. Heydenburg, AN.

A thorough knowledge by the pilots of their aircraft and its equipment has resulted not only in increased combat-readiness but also in an outstanding safety record which won the runner-up title for VF-103.—VF(Day)

to be more meaningful to the individual than the vague millions of dollars we lose through accidents. We felt we needed a gimmick to make our program alive, competitive and effective. Our accident rate indicates we may have found one.

This squadron spent 154 days deployed, with 4 to 20 aircraft, plus the present deployment in WestPac. These deployments necessitated operating from 11 airfields in 5 countries and two aircraft carriers.

Carrier qualifications and requalifications were completed under adverse wind and weather conditions and not one aircraft was bingoed to the beach due to inability of a pilot to land on board.

Operation Blue Star gave the squadron the opportunity to operate on the Short Expeditionary Landing Field; an airstrip of aluminum planking with a landing area 36 feet wide and 3400 feet long. This operation was made possible through the utilization of mirror approaches, morested landings and jato take-offs.

Continued

VF-24

VF-92 VF-103

A practical minute to minute awareness of the rewards of safe flight operations has been the spur of our program.

Winner, VMF/ VMF(AW), FMFLant

VMF-333

WITH the introduction of the F8U-2 in the squadron, pilot and maintenance personnel familiarization with the new aircraft became a major undertaking. Only three of the assigned pilots had flown the F8U and none of the maintenance personnel had ever worked on the aircraft. However, the squadron had two major advantages: (1) The experience of three other F8U squadrons based at MCAS, Beaufort, S. C., and (2) a willingness to learn by all hands. Both of these advantages were used to the utmost.

The facilities of the F8U NAMO Trainer was used extensively in preparing pilot and maintenance personnel for the transition into the newer model aircraft.

Lt. Col. James K. Johnson, CO of VMF-333 briefs (left to right) Capt. Tom Morgan, 1st Lt. Bob Schuppe, and Capt. Frank Williams. Meticulous attention to complete and accurate briefings aided the squadron in winning the VMF/VMF(AW) Award.

aircraft. An additional "flight" was made in the trainer after the first two or three familiarization flights in the aircraft.

After familiarization stage each pilot was scheduled for a minimum of one flight in the trainer per month in addition to one flight after any 10-day non-flying period due to leave, illness, . . . Each pilot completed a taxi familiarization prior to the first flight. This involved a start, taxi, and takeoff roll to a 100 knots and then braking to a stop. All pilots were carefully supervised through the familiarization syllabus of six flights. This procedure started the squadron standardization program early in the transition phase.

Because landings continue to be a major source of aircraft mishaps, special emphasis has been placed on this phase of flying. In MAG-32 all landings are monitored by experienced and regularly assigned landing monitor officers. These officers log all discrepancies noted on each landing approach. These logs are then forwarded to the squadron where each comment is brought to the attention of the pilot concerned. In addition a file is maintained on each pilot's landing discrepancies. These files are reviewed periodically for any unsafe trends and corrective action is taken. All landings at the home field are made by the use of a mirror. Morest gear has been placed in the center of one runway for any pilot who has an emergency where there is a question of directional control or braking ability.

As the squadron progressed through the other phases of training a parallel indoctrination program was used prior to entering each phase.

This squadron is especially proud of its active flight equipment maintenance program. The pilot's flight equipment shop was moved from the hangar to a room adjacent to the pilots' readyroom. This enables pilots to store all their personnel flight equipment, except flight suits and anti-G suits, in the same room the parachute riggers normally work making it available

for preventive maintenance most of the time. Since this program was initiated, airborne discrepancies on oxygen masks, micro phones, headsets, . . . have virtually ceased to exist.

Winner, VF(Day), NavAirPac **VF-24**

THE major contributing factor for the squadron safety record was maintenance. Responsible for this were the well qualified, experienced personnel that constituted the maintenance department. Programs included:

Weekly inspection of each aircraft made by an assigned pilot.

All pilots either had a previous tour in the F8U or were RCVG trained.

Continuing use of the F8U Operational Flight Trainer to keep pilots current on emergency procedures.

Strict adherence to squadron doctrine in all phases of flight and ground training and operations.

Winner, Special Mission Unit, NavAirLant **VFP-62**

IN a squadron where over half the squadron aircraft and pilots are on detachment a far reaching safety program must be in effect and *be effective.*

A daily APM safety meeting is held at the parent squadron to discuss all aspects of flight and ground safety. Changes in procedure, quizzes and general safety matters are forwarded to the different detachments. When aboard, ship detachments participate in the safety program of the embarked F8U squadron.

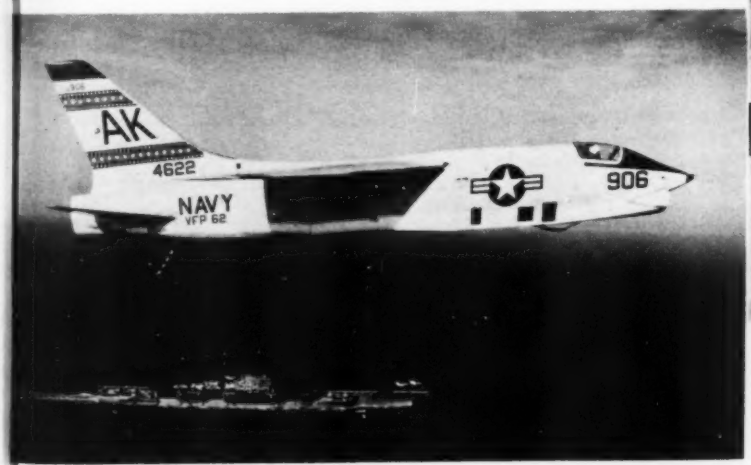
Another factor in the squadron's safety record is the untiring efforts of the maintenance department in providing both corrective and preventive maintenance.

The fact that safety is not to be confined to the efforts of one man or group of men but is the responsibility of every man in every department must be emphasized.

Continued

Captain Charles E. Griggs, USMC, manning a runway mobile control unit, illustrates one of the many techniques utilized by VMA-233 in winning its CNO Safety Award.

Constant alertness to all safety precautions by ground support personnel, as demonstrated by David R. Hill, AMEAN, helped VA-192 attain the runner-up title in the VA(Jet) category.



VMA-233

VMF-323

Here is part of the maintenance team that contributed to VA-192's accident-free year.

The detailed planning and coordination which enabled all VMA-225 pilots to accumulate their 100th carrier landings on the same day aboard USS Essex also contributed to their entire year's safety record and achievement of the runner-up position in the VMA(Jet) class.

Runner-Up VF(Day), NavAirLant VF-103

THE safety program of this command has been predicated on the firm belief that well informed personnel are the foundation of a safe squadron. A thorough knowledge by the pilots of their F8U aircraft and equipment has resulted not only in an outstanding safety record but increased combat-readiness as well. Sound operating procedures, which have been proven in practice, form the basis of a squadron doctrine implemented by all squadron officers.

Among the maintenance personnel, pride in work accomplished has been instilled through a team spirit existing from the Commanding Officer to the newest Airman Apprentice. Technical thoroughness has been assured by experienced petty officers and an alert Quality Control Division.

Runner-Up, VMA(Jet), FMFLant VMA-225

THE squadron changed from A4D-2 aircraft to A4D-2N aircraft on 1 March 1960. This was accomplished without incident by use of NAMO Trainer and one week of ground school plus cockpit checks and close supervision by more experienced pilots. All pilots who had no previous A4D experience received at least 30 hours in A4D aircraft with the standardization squadron prior to assignment in VMA-225. Before deploying for carrier qualification all pilots had more than double the amount of required field carrier landings.

High morale by both officers and enlisted was a contributing factor, reinforcing such measures as:

Close supervision and intensive ground training of all pilots and ground personnel.

Daily contact with the Flight Surgeon.

Daily pilots' meetings where all the latest pertinent information pertaining to flight safety is thoroughly discussed.

VA-81 attributes its accident-free year to high squadron morale and the professional competence of all hands. Constant vigilance earned the CNO Award for the squadron.

VA-81

VA-192

Personal pride and competition between plane captains produce a sharp outfit and an alert crew. These were major ingredients in VMA-121's selection as the Award winner in the VMA(Jet) category.

Runner-Up, VF(AW), NavAirPac

VF-92

AN aggressive preventive maintenance program from the command level down through the shops, made this a successful year.

All maintenance personnel realize the importance of their jobs. With this attitude, and the very capable leadership of their officers and petty officers, they have approached their assigned task in the utmost professional manner. This attitude of professionalism and pride in their work has shown itself time and time again from the pre-launch inspectors on the flight deck to the men working on our F3H aircraft on the hangar deck and in the hangar.

Although this squadron has suffered two strikes during the fiscal year, both were caused by engine failure in flight. As evidence of a program to minimize this hazard, the squadron has changed 21 engines during the fiscal year for reasons of unserviceability due to metal filings in the oil filters, foreign object damage, . . . The foreign object was discovered primarily by maintenance personnel in the course of their normal inspections, which are both frequent and thorough. It is felt that this preventive maintenance program eliminated 21 additional airborne engine failures.

The pilots discuss their flights continually and are always striving to improve operating techniques both ashore and afloat. They read all F3H accident reports and pertinent information

Aggressive preventive maintenance by squadron personnel was credited by VF-92 for achieving the runner-up position in the VF(AW) category.

Thorough preflight briefings such as this one by CDR W. D. McNair, Commanding Officer VA-65, were a major factor in completing an accident-free year.—Runner-up VA(Prop)

This smooth working team of professionals helped contribute to VA-65's attainment of the runner-up in the VA(Prop) category.

contained in these reports is brought to the attention of the maintenance personnel.

In all phases of its operations, Fitron 92 has striven to be best, and the goal of professionalism aspired to by the pilots and personnel has carried this squadron through a successful year in which it was ship-based for the majority of the time.

Winner, VA(Jet), NavAirLant

VA-81

ATKRON 81's accident-free year is attributed to two major factors; namely—high squadron morale and professional competence of ALL HANDS.

It is significant to appreciate that the squadron operated all but two months of the year aboard a carrier; and that during one of the two shore-based months, CarQuals were conducted by a small detachment. Luck or "the breaks" were with us, certainly; but so was constant vigilance on the part of plane captains, shop crews, inspectors, supervisors, pilots and the Safety Officer.

A Maintenance Organization second to none provided the firm basis for safe and sane operations. This was followed with an appreciation and understanding by the pilots of the limitations and capabilities of their A4D-2 airplane. Lectures, discussions and reviews moderated by the Safety Officer kept the interest up. Finally, supervision down the line and in all phases of the squadron's operations prevented distraction from our goal, safe and sensible operations.

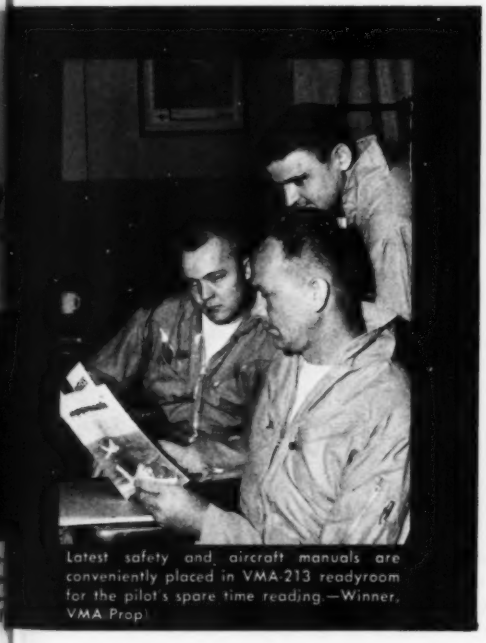
Winner VF-121, a RAG squadron, emphasized programmed maintenance to achieve the utmost in quality control in maintenance of the squadron F3H and F9F-8T aircraft.

VA-52 VA-672

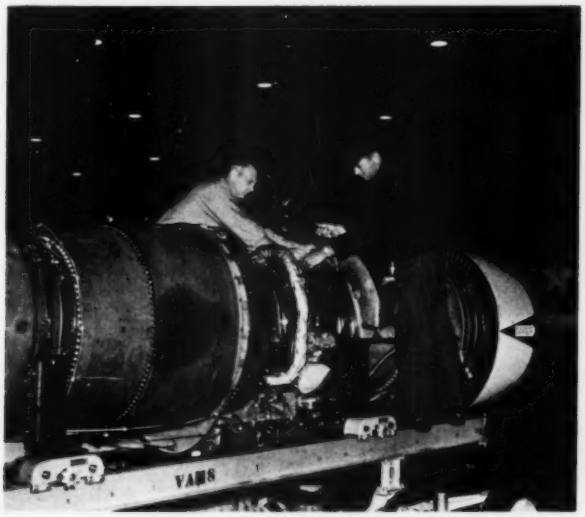
VA-65

Well planned Saturday morning safety briefings are a vital portion of VA-672's safety program which enabled this squadron to win the CNO Safety Award in the VA(Prop) class.

Winning the CNO Safety Award was in large part, due to the high motivation of VMA-213 Maintenance personnel.—VMA(Prop)



Latest safety and aircraft manuals are conveniently placed in VMA-213 readyroom for the pilot's spare time reading.—Winner, VMA (Prop)



Thorough inspection and competent supervision keep engine failures in HATRon Eight to a minimum. H. L. Miles, AD1, and G. P. Mills, AD2, conduct a major inspection.—Winner VAH

VMA-213 VAH-8

VAH-1

VF-121 credited daily all pilot's meetings, one part of an extensive program of getting the word out, plus programmed maintenance as key factors in their winning in the replacement squadron category.

There's no telling what LSOs LT Tommy Thompson and LT Len Jacobsen are putting in book or on the air—but the record of winner VS-37 speaks for itself—no accidents or ground accidents.

Winner, VA(Prop), NavAirPac

VA-52

THE accident-free record of this command was achieved by the establishment and implementation of a vigorous safety program emphasizing the accomplishment of the squadron's work in a professional manner. The fourth senior squadron officer was appointed to administer this program and was given full authority to take any action necessary to achieve the desired results. Particular emphasis was placed on preflight and postflight briefings and in-flight procedures for the AD-5, -6 aircraft. Each morning all-pilots-meetings were held, continually reviewing aircraft systems, pilot's handbooks, standing operating procedures and other pertinent items. These APMs were most instrumental in developing professionalism in young aviators necessary to maintain a high safety record.

A major contribution to this safety record was the outstanding support provided by the Maintenance Department. Rigid inspection procedures applied by supervisory personnel precluded the release of an unsafe aircraft for flight. High quality control has provided outstanding aircraft availability.

The firm establishment of a safety policy by the Commanding Officer provided the necessary stabilizing element in the pursuance of this safety record.

Winner, VAH, NavAirPac

VAH-8

ALTHOUGH it is a result of many factors, HATRon EIGHT's accident-free record may be ascribed to success in three broad areas: Maintenance inspection and supervision; experience and a professional attitude by all flight personnel; and enthusiastic interest in safety by the entire squadron.

Consistently high aircraft availability and dependability have been achieved through thorough A3D indoctrination, supervision, and inspection within the maintenance department. Every launch, day or night, while based on board USS MIDWAY (CVA-41), was carefully observed by at least two maintenance officers and three chief petty officers, in addition to the regular troubleshooters. Periodic inspections received the same detailed attention. Senior petty officers were relied upon

VF-121

VF-174

CDR A. S. Taddeo, USN, Commanding Officer, VA-52 credits the establishment and implementation of a vigorous safety program in winning the VA(Prop) Award.

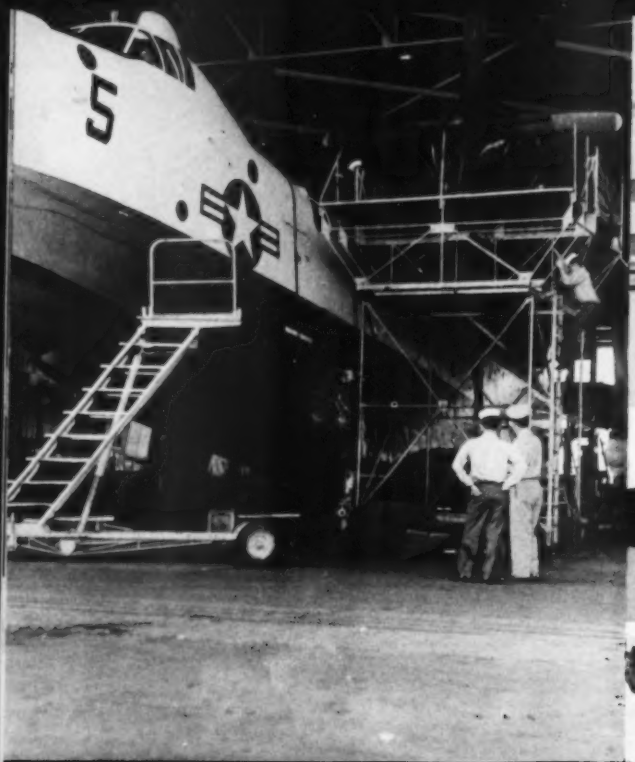
Back home after another successful mission in year of accident-free operations, two pilots from winner VP-4 contemplate the CUBI PT duty thunderstorm.

VP-881 ground crews supported flight crews to the fullest in achieving an accident-free year both in the air and on the ground.

In winning reserve squadron VP-881 the motto "Nothing is left to chance," reflects the team work of flight crews to ensure that their P2V aircraft were airworthy and mechanically sound in all respects prior to each mission.

CVG-9

CVG-1



Personal command attention and the organization of a Squadron Enlisted Safety Committee were instrumental in VP-47's selection as the Award winner in the VP Seal class.

High caliber maintenance and support helped to win the VF/VA(Jet) Award for VF-727. Chief Siedel, R, and Airman Brown are shown preparing 20 mm ammo for gunnery flights.

Excellent pre-departure crew briefings combined with exceptional usage of the R6D simulator, and Link trainer qualified VR-21 for runner-up in the VR/VMR class.

VS-32 attributes their accident-free safety score in part to a well balanced and integrated maintenance and flight training program. Late in the fiscal year the runner-up squadron split to form VS-22.

S/SGT Marsiglia and S/SGT Morris of the VMR-252 engine shop, performing engine buildup on a 3350 engine used by the squadron's R4Qs. The boxcar squadron was a runner-up in the VR/VMR category.

VP-4

VP-18

An R4Q of winner VMR-352 following a brigade airlift. Standardization and strict adherence to manuals is their key to success.

1st Lt. J. Shelton, plane commander and 1st Lt. O'Conner, co-pilot of VMR-252 (runner-up) go carefully over the pre-start check list for the R4Q.

Good engine maintenance—and continual ground training of new personnel is vital to a safety record. Here, Skelton, AD2, of runner-up squadron VM-1, explains the operation of the master control used in R3350 engines of the big WV-1 aircraft.

for their technical experience and competent supervision, and all hands devoted long hours, often under adverse conditions, to keep the squadron aircraft in a safe operational status. This type of interested supervision in a large measure accounted for the confidence expressed by the flight personnel in the dependability of the squadron aircraft.

Special emphasis was placed on corrosion prevention and control. The maintenance officer periodically briefed flight crews on the nature of aircraft corrosion and how to detect it on weekly as well as preflight inspections. A special corrosion control division was formed to combat corrosion on a daily basis. The maintenance officer and the chief petty officer-in-charge of the corrosion control division developed special tools and inspection procedures and periodic check sheets for this division. Outstanding availability and post-deployment inspection grades attest to the success of this program.

A professional approach to flight safety was achieved by a thorough program for the continuing education of all pilots. The safety officer placed particular emphasis on a quick but thorough review of all A3D accidents and incidents, followed by a general discussion of the methods for improving squadron doctrine and operating procedures as a result of the experience of others. It is difficult to assess the positive accomplishments of such a program but one example is noteworthy:

Shortly after reviewing an accident caused by engine compressor stall and flameout, a squadron pilot experienced a flameout in one engine at 44,000 feet after inadvertent thunderstorm entry at night while returning to the ship. Unable to restart the engine, the pilot diagnosed his trouble, successfully let down to a lower altitude, and diverted to his bingo field for an uneventful single-engine landing. A big assist to the ability of this pilot to handle this potentially disastrous emergency can be given to the squadron's safety education program.

Another area of flight safety

VP-881

VP-49

Constant emphasis is placed on standardization of operating procedures for all AEWRonOne flight personnel. Here CDR B. P. Moore reads the WV check list for CAPT C. G. Strum, Commanding Officer of the runner-up squadron.

Winning the CNO Award for the second consecutive year reflects the conscientious efforts of every officer and enlisted man in HMR(L)-361.

Meticulous maintenance and the type of team work illustrated above enabled HS-8 to complete an accident-free year and win the runner-up position in the HS-8 category.

Sporting the latest in "poopy" suits, Lt. Col. J. E. Hansen, Commanding Officer of HMR-263 credits standardization for much of his squadron's safety success. Here Maj. R. I. Glover briefs the Lt. Col. for an over-water flight to follow.

VP-47

VS-32

stressed by the commanding officer and the safety officer was the landing phase of each flight. Heavy emphasis was devoted to proper glide slope flying, getting "set up" early in the pass, and staying with the meatball all the way to prevent the last minute dive-for-the-deck that has resulted in so many aircraft accidents.

The most difficult area to assess, but extremely important, was the pride, interest, and effort of all hands in establishing and maintaining HATRon EIGHT's fine reputation for meeting all commitments safely. In less than two years, the squadron completed two seven-month deployments to WestPac, together with the attendant Car-Quals, exercises and inspections. Since 12 October 1958 it has had an accident-free record which is now approaching 7000 flight hours. To complete the second WestPac deployment, all nine aircraft were TransPac'd from West-Pacific to NAS Whidbey Island. The 4850-mile flight was made with two fuel stops. Since its commissioning in May 1957, the squadron has had no "strike" category accidents and has had no flight personnel injured. It is accomplishments such as these that have made every man who has served in the squadron proud of its accomplishments and vitally interested in continuing such a fine safety record.

The target area reached, the troops are landed, deploy, and the assault is on. HMR-767 tackled the safety objective just as aggressively—and won the CNO Award in the HMR category.

Winner, RAG Sqdn, NavAirPac

VF-121

OUR safety record was achieved through command attention and support, utilizing an extensive intrasquadron communication network for the free and rapid exchange of safety in-

Below (l to r) LT M. W. Davidow and LCDR H. V. Hoy of winning Reserve Squadron HS-741.

Center. CNO Award winner H&MS-13 has been accident free for more than two years.

Right. Runners-up H&MS-24 operated 4 models of aircraft: F9Fs, A4D-2s, F3D-2s and an R4D.

VS-37

VS-742

All hands of VT-23 put out top effort to win the CNO Award in the ATU jet class. Here High Power Turnup and Adjustment Crew Grams, AD2, Hawkins, AD1, and Rust, ADJ3 conduct engine calibration.

formation both up and down the line.

This included the following:

Aviation Safety Board (published minutes)
Regular All Pilot and All Officer Meetings
Aviation Safety Suggestion Program
Hazardous Condition Reports
Line Comment Sheets
Abundant Posters
Standardization Boards
Weekly Newsletter
Aviation Safety Clipping Service
Landing Evaluation Program
Squadron Base Radio
Readyroom AAR incident. Flight Hazard, Ground Accident File
Pilot True Confessions Program
Division Bulletin Boards

In addition, programmed maintenance was utilized emphasizing thoroughness through training, direct work supervision and competent quality control.

VT-23 ground crews, instructors and students took especially good care of their J-65 equipped F11Fs, with winning results.

Winner HU-1 published a monthly "Infogram" to get pertinent technical safety dope to their scattered detachments. One of their HTLs is shown landing aboard the USS THOMASON DD-760

Outstanding maintenance by VT-31 made possible their winning in the ATU (Prop) category. Here the Quality Control team reviews items to look for when an aircraft is reported ready after a 120-hour check

VT-3 top score in the BTG(Prop) category was supported by extensive maintenance effort on squadron T-28.

Runner-Up, VP(Land), NavAirLant

VP-18

CONTINUING emphasis was laid on the fact that safety is an All-Hands evolution; a direct personal responsibility extending from the Commanding Officer and the Safety Officer to the most recent enlistee, through all levels of the chain of command. Specific action taken by this P2V squadron included:

● *For Safety Consciousness of Officers and Men*

Safety required reading boards closely monitored for completion and compliance. One is maintained in the Readyroom and a separate one for each shop for the enlisted men.

Safety displays throughout the hangar, covering flight and ground safety precautions. Use of large plexiglas plates in washrooms for posters, articles, and reminders, including excerpts from Weekly Summary of Accidents with comments.

SAFETY READ racks in all heads, with latest and most pertinent information outlined in red. In view of the limited reading time of all hands, safety material is "pre-digested" by the Safety Officer and the pertinent parts are emphasized.

Inspection of flight crews in survival gear by C.O., Safety Officer, and PPC.

Announcements are made twice a month in the Plan-of-the-Day and at quarters in regard to the progress of the Squadron Accident-Free Record. Particular emphasis is put on squadron spirit and the fact that VP-18 has been accident-free since 7 March 1957, and as of 30 Jun 1960 had accumulated 28,170 accident-free hours.

● *For Better Maintenance*

A rigid Maintenance Quality

HU-2 attributed their safety record to a rigorous program which included both a Standardization Board and Enlisted Aviation Safety Committee.

VMCJ-2 personnel, winners in the Special Award group, report in detail on page 27 on how their maintenance people and pilots worked in close partnership to complete an accident-free year.

Control Program which includes:

Weekly aircraft inspections by pilots, with forms processed through Maintenance, Operations and Safety.

Inspection by highly qualified inspectors of all maintenance work performed.

Spot checks of maintenance work by a Chief Inspector, who is not anxious to keep his friends.

Formal training of all maintenance personnel on the proper performance of periodic preventive maintenance checks.

Formal training of all plane captains prior to designation. This includes emphasis on the proper performance of the BuWeps recommended daily preflight inspection, final examination and flight check, and rechecks.

● *Improvement of Pilot Training.*

Strict adherence to Squadron Operations Doctrine, which is reviewed and kept current by the Standardization Board.

Review of all applicable Navy incidents and accidents.

Review of PPCs on all phases at the time of their instrument exams.

A Flight Check Board, composed of senior experienced aviators, gives all checks and all instruction in aircraft emergencies in the PP3P stage.

Winner, VP(Sea), NavAirPac **VP-47**

HOW was our safety record achieved? By

Personal attention to safety by the Commanding Officer in monthly All-Hands talks and his constant follow-up through periodic surveys to determine areas of laxity in safety procedures.

Organization of a Squadron Enlisted Safety Committee, encompassing all divisions, generating the personal interest of all the men.

The Safety Officer publishing a weekly newsletter dealing primarily with timely P5M safety matters.

Immediate investigation of questionable procedures to eliminate practices which might have otherwise developed into unsafe situations.

Runner-Up, VS—NavAirLant **VS-32**

THERE are dominant and specific factors which have made their contribution to the perfect VS-32 safety score. Some of the most important are:

An active S2F Plane Captain qualification program.

Emphasis on "Green" instrument card qualification and instrument flights—individual and group.

HS-9

VW-1 HS-8

Required single-engine emergency qualification to FCLP for all pilots in each ashore period.

All carrier operational night recoveries CCA (simulated and actual).

Completely standard doctrine for formation flight and carrier "Delta" and "Charlie" patterns.

Clean airplanes (inside and outside)

Constant review and improvement of maintenance quality control organization.

Integrated planning All ground, on-the-job, and flight training was integrated into an advance "block schedule" for a one-week minimum (no one is shorted on training time available).

Runner-Up, VMF-323
VMF/VMF(AW) AirFMFPac

THIS command was assigned F8U-1 aircraft in October 1958 and has flown a total of 8608 hours without the loss of an aircraft. During the past year a total of 65 pilots have participated in this organization's flight operations. Constant close supervision and thorough inspection

The routine of a utility squadron is both vital to the fleet and challenging to squadron personnel. VU-7 took runner-up honors in the Special Mission category.

A thorough knowledge of equipment and the recognition of Maintenance as a real professional partner in aviation safety achieved the designation as winner in the Special Award Class for VMCJ-2.

Precision team work in the air and conscientious cooperation on the ground resulted in VAW-33 selection as winner in the Special Missions category.

A well planned program with direct command attention was given credit by HS-9 in winning the CNO Safety Award.

HMRL-361 HMR-767

HMRL-263

Adherence to sound operating and maintenance procedures won a CNO Special Award for VF(AW)-3.

The professional attitude of officers and men, despite the rigors of Antarctic operations won the coveted CNO Award for HU-1.

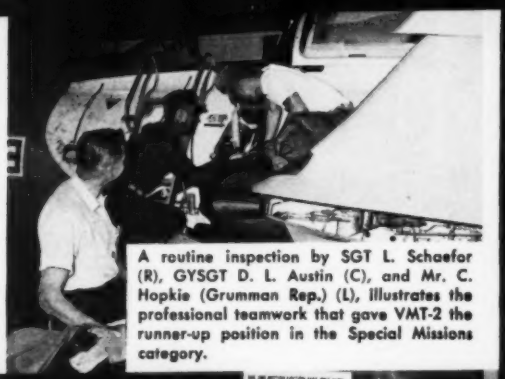
Squadron personnel through their constant and diligent adherence to safe flying principles garnered the CNO Award for VR-742.

High morale plus sound maintenance and operational procedures paid off for VF-(AW)3, a Special Mission winner.

HS-741

H & MS-13

H & MS-24



A routine inspection by SGT L. Schaefer (R), GYSGT D. L. Austin (C), and Mr. C. Hopkie (Grumman Rep.) (L), illustrates the professional teamwork that gave VMT-2 the runner-up position in the Special Missions category.

The vital maintenance of VMT-2 survival equipment is accomplished by SSgt. E. M. Russell (R), and LCpt W. E. Buzek (L).—Runner-up, Spec. Missions

The policy that "any gripe"—no matter how trivial it may seem, downs the aircraft, has led directly to the lack of situations where the pilot finds himself the victim of accumulated discrepancies. Such attention to detail won the runner-up slot (Special Awards) for VMT-1.

of all maintenance and rigid adherence to standard maintenance practices have provided for maximum safe operation of assigned aircraft.

Additionally the utilization of experienced pilots to closely monitor, train and supervise younger pilots' progress through a standard training sequence and standing operating procedures has contributed to the accomplishment of safe operations. Special emphasis has been placed on detailed briefings and continued indoctrination in aircraft systems and emergency procedures and has insured the maintenance of high level of combat-readiness.

Runner-Up, VR/VMR, NavAirPac **VR-21**

IN addition to the operational and training flights completed, the parent squadron logged approximately 6500 hours of training in the R6D simulator, and 900 hours in the Link trainer. The simulator was especially useful in providing the best medium for demonstration and indoctrination in the correct flight procedures. It has an infinite value for instruction concerning the handling of aircraft emergencies, and directly contributed to the squadron safety training.

Continued

Winner, ATU(Prop), TraCom **VT-31**

TRAINING Squadron Thirty-One attributes its accident-free year during fiscal 1960 to the following:

To the Commanding Officer, a graduate of the Aviation Safety School, taking a vigorous and active part in all safety meetings and periodically expressing squadron policy on all items of safety.

To strict adherence to Standing Operating Procedures as promulgated by the Standardization and Training Departments.

Through a series of weekly lectures, conducted by the Safety Department, covering the complete aerodynamic and mechanical capabilities of T-34 and SNB aircraft, plus lectures covering all associated topics—weather, aviation equipment, doctrine . . .

By inspecting each aircraft weekly—accomplished by assigning each aircraft a permanent inspecting pilot.

By thorough discussion with all personnel of accidents from other commands.

By constant warning and reminder to all personnel of the three factors involved in the vast majority of all SNB accidents—*laxity, overconfidence,* and *complacency.*

The professional approach to all aspects of safe flight operations on the part of all hands won the CNO Awards for VT-3 in the BTS(Prop) class.

Personal attention by command and the organization of a squadron Enlisted Safety Committee was credited with winning the VP (Sea) Award for VP-47.

Winner, VR/VMR, AirFMFPac **VMR-352**

THIS record was achieved mainly through strict adherence to the R5D and R4Q aircraft flight manuals and the squadron SOP which are revised constantly in the interests of *safety.* Any conflicts between the two publications are usually resolved in favor of the manual. Thorough indoctrination of new pilots and frequent standardization checks of qualified pilots keep the information in these books firmly implanted in everyone's mind.

A good deal of the credit must go to the engineering and maintenance section for its excellent system of checks, repairs, maintenance and plain old hard work and long hours, intelligently employed. Constant training and close supervision of all flight and maintenance personnel by department heads insure an up-to-date, alert team. Frequent lectures, announcements, all-pilot meetings, crew briefings, maintenance talks and safety programs covering all the latest information available increase the safety factor immensely.

VT-3 NATTU OLATHE VFP-62

Runner-Up, HS, NavAirLant **HS-8**

A SOUND squadron doctrine is the foundation for this squadron's safety program. A planned program, with direct command attention, for instilling safety awareness in all squadron personnel on all work levels, is accomplished by coordinating the work of the Flight Safety Board and the Maintenance Safety Board.

Rigorous requirements for initial HSS Plane Commander designation, strict adherence to SOP and an additional requirement that all PCs requalify each six months, has developed in each pilot a keen understanding of the flight safety program.

Winner, Special Award, FMFLant **VMCJ-2**

TO achieve a safe and effective accomplishment of the assigned mission only accepted methods and techniques are used in flight procedures for our F8U, F3D, and F9F photo aircraft.

VMCJ-2 endeavors to utilize the professional pilots' approach to all facets of flying and safety. The safety program is designed to help the pilots and a direct, simple approach to all phases of aviation safety is used whenever possible. All recognized publications on aviation safety received by the squadron are made available to the pilots.

Maintenance is considered a real professional partner in aviation safety and the welfare and training of maintenance personnel are considered foremost.

A dual philosophical approach to aviation safety and accident prevention is employed by:

- Benefiting from others who have had the bitter experience of an accident.
- A thorough knowledge of equipment used by VMCJ-2 and that any emergency can be handled with dispatch and confidence.

Other salient features of VMCJ-2's safety program are:

- Strict adherence to the squadron's flight doctrine.
- Spontaneous quizzes on emergency procedures.
- Daily pilots' safety meeting.
- Close supervision and monitoring of pilot/aircraft checkout.
- Maximum utilization of the 2dMAW formal instrument course (academic and flight phases).
- Maximum utilization of operational flight trainers and link trainers.
- Kangaroo court system to help bring to "light" minor infractions of safety practices.
- Clear — concise — complete write-up of aircraft discrepancies.
- Close harmony enjoyed by the Operation and Maintenance departments which prevents over extension of either the pilots *or* aircraft.
- Command supervision by all departments.
- Constant continued and accentuated program to encourage squadron pride.

A good deal of the credit goes to the engineering and maintenance section of VMR-352 for its excellent system of checks, repairs, maintenance, plain old hard work and long hours in winning the CNO Award.

VAW-33 HU-1 HU-2

Precise team work and meticulous attention to detail is the work of a professional squadron and secured the coveted CNO Award for VF 14.

The team work, cooperation and hard work of VMA-233 personnel has secured both the CNO Safety Award for VMF/VMA(Jet) and the Marine Air Reserve "Pete" Ross Safety Trophy.

Winner, H&MS, AirFMFPac **H&MS-13**

THE accomplishment of an accident-free year of aircraft operation is considered to be due primarily to the following:

- Continuous emphasis on insuring that each pilot evaluate his own current capabilities and proficiency, and that he conduct his flights accordingly.
- Continuous emphasis on the importance of the contribution of each member of the organization towards the safe flight operations, whether he be the senior pilot or the junior fuel truck driver.
- Close supervision and careful instruction by the senior non-commissioned officers.
- Careful scheduling to insure that less experienced pilots have the greatest opportunity to benefit from the background of the more experienced pilots.
- The whole-hearted cooperation of all hands in accomplishing the safe conduct of flight operations.
- It is noteworthy to mention that this is the *second* consecutive year H&MS-13 has flown accident free, operating R4D, R5D, AD, FJ, F8U, and TV aircraft.

Runner-Up, Special Mission Units, NavAirLant **HU-2**

THE magnitude of our operations, the increased degree of accident exposure based upon the number of shipboard landings per flight hour, the turnover in experienced pilots and the operation of 11 models of helicopters plus an SNB all combine to present a multitude of flight safety problems. These detriments have been overcome to a great extent by vigorously pursuing the flight safety program. The safety record attained by this squadron may be attributed to the following:

- Emphasis by the Commanding Officer on a strong safety program based upon planning; education and the acceptance of individual responsibility by each member of the squadron.
- Maintenance of Standardization Boards for each model helicopter.
- Thorough indoctrination of new pilots by flight syllabus training and ground lectures. Emphasis is placed upon safe mission accomplishment through evaluation of risk versus necessity to complete important operational missions.
- Formal ground training, by helicopter, of newly assigned maintenance personnel followed

VMT-2

VU-7

Continual reemphasis on supervision and the personal interest of command in an effective safety program were credited with VS-742's winning.

by closely supervised on-the-job training.

- Minimizing maintenance of pilot qualification in more than one model helicopter except as may be required to meet operational commitments.
- Continual reemphasis to the officer-in-charge of squadron detachments of their responsibility for *supervision* of junior pilots and maintenance personnel assigned.
- Issuance of a monthly publication devoted entirely to flight safety matters. Entitled "Feedback," this publication is devoted to full discussion of operational, maintenance and other matters directly affecting safety of flight operations to insure complete dissemination of pertinent and current information to all hands—even though they are spread over several million square miles of ocean.

Establishment of an active enlisted aviation safety committee and an aviation safety council within the squadron. Monthly meetings are held with the overall goal of enhancing the aviation safety program.

Runner-Up, HMR, FMFLant

HMR(L)-263

DURING the past year this squadron flew an accident-free year in HRS-3 and HOK aircraft. Strict adherence to Standing Operating Procedures in all areas of operations were emphasized as the prerequisite to a successful safety record. A portion of the daily pilots' meeting was devoted to the aviation safety program and all pilots were encouraged to express their opinions about the squadrons' operating procedures at these meetings. Pilot ground training was conducted with emphasis on accomplishment of the unit's mission and tasks in a professional manner. Precision in all basic maneuvers (landings, takeoffs, . . .) constant training on emergency procedures, and the continuing requirement for computing the correct weight and balance for each flight were stressed.

The aircraft maintenance department directed their efforts toward quality control of maintenance through technical training, close and constant supervision, and strict inspection procedures. The maintenance program was aided by constant pilot indoctrination on the importance of accurately listing discrepancies on Part B of the yellow sheet. This indoctrination is a continuing process in this squadron.

Continued

Clear and concise yellow sheet write-ups enable maintenance personnel to properly service their aircraft. Recognition of this principle is one facet of the professional unit, and garnered the CNO Award for VF-24.

VF(AW)-3

Winner, HMR, AirFMFPac **HMR(L)-361**

THE achievement of this safety record reflects the conscientious efforts of every officer and enlisted man in this squadron.

The goal of two consecutive safety awards, and three awards in four years was set last July; and, since that time, our every effort has been expanded towards this goal.

To ensure this goal, a close and constant check on pilot training and officer and enlisted ground training has been made. A thorough evaluation program of each pilot's qualifications and ability to handle the HUS helicopter operationally and to train new pilots has been conscientiously carried out.

VMCJ-2 endeavors to utilize the professional pilot's approach to all facets of flying and safety. This attitude won a Special Award for the squadron.

Additional information concerning the objectives of the naval aviation safety program and its organization are outlined in the Naval Aviation Safety Center publication "Readiness Through Safety." While copies have been distributed to the naval aeronautical organization, limited supplies are available upon request. Address: Commander, U. S. Naval Aviation Safety Center, NAS Norfolk 11, Virginia.

Runner-Up, Special Awards, FMFLant **VMT-1**

THE achievement of a second consecutive year of accident-free operations can be attributed to three aspects of flight operations: Maintenance, Supervision and Standardization. During this two-year period 194 aviators completed a three-week sweptwing transition course while 196 pilots completed a three-week instrument refresher course. Although all were designated Naval Aviators, the experience level ranged from second lieutenant to colonel, and flight experience from heli-

VMT-1

copter-qualified-only, to a refresher in jet aircraft.

Meticulous maintenance has contributed a major share toward this achievement. One of the contributing factors toward this outstanding maintenance has been that every returning flight is met by the trouble-shooters and a direct liaison between pilot and maintenance personnel is accomplished while the pilot completes the yellow sheet. The policy that *"any gripe"—no matter how trivial it may seem, downs the aircraft, has led directly to the lack of situations where a pilot finds himself with an accumulation of discrepancies from which he cannot extricate himself without damage or loss of the aircraft.*

Direct supervision of all phases of aircraft maintenance and operation is accomplished by the Commanding Officer through his staff and NCOs. Initial check-in by new personnel includes a detailed briefing by the Commanding Officer. This briefing stresses each squadron's mission and the importance of each individual to the fulfillment of that mission: anything less than perfection is unacceptable.

Supervision of pilots is maintained through a *daily* 15-minute All Pilots Meeting to which attendance is mandatory by both students and instructors. This All Pilots Meeting is held prior to the first launch. Items covered include: present and forecast weather at home station and alternates, selected emergency procedures applicable to the day's missions and the season, current NOTAMs, and a short discussion by the squadron flight surgeon on aero-medical problems. This meeting initiates the pilot's "thinking about airplanes" and certain aspects of safe flight prior to commencing flight operations.

Standardization is attained by rigid adherence to a proven SOP. This SOP covers in detail the aspects of all squadron flights, both transition and instrument. Realizing that an SOP must be a *living part* of the squadron to be effective, standardization meetings are held bi-monthly, and the results published in mimeographed form.

Strict adherence to standing operating procedures and the constant effort to instill the traits of self-supervision and self-discipline in all personnel earned the CNO accolade for VT-7. (BTG-Jet)

MISSING???

The staff of APPROACH sincerely regrets the absence of photos from a few of the winning and runner up squadrons. Those missing were either not received, unsuitable, or arrived late. Extensive efforts were made to secure photos before deadlines of these units and several were obtained through the cooperation of local PIO offices and a detailed search of NASC photo files.

Submission of pertinent remarks by nominees is required by OpNav Inst 3590.5D. Where available these were screened for the most constructive and specific information for other units. Photos were requested by the Weekly Summary of 13-19 June and by message to type commanders.

Winner, Special Mission Units, NavAirPac

HU-1

THE professional attitude of officers and crew was encouraged, and the "Infogram," a monthly digest of pertinent directives and technical information, was published to improve the flow of information to widely scattered units and detachments flying six models of helicopters and the SNB.

Daily all-pilot meetings provide an effective medium for disseminating information for locally-based operations. Intensive training of pilots and aircrewmen prior to extended deployments and subsequent retraining upon their return to the parent squadron insures standardization and qualification in operational procedures.

Continued

USS ANTIETAM

USS THETIS BAY

Winner, Special Awards, NavAirPac

USS PRINCETON (LPH-5)

THE safety record of PRINCETON can be attributed to a number of factors. Some of the more important factors are as follows:

● A thorough and comprehensive Standing Operating Procedure for shipboard operation of helicopters is maintained. The requirement for strict adherence to this SOP by Squadron and PRINCETON personnel is mandatory.

● Adequate and timely maintenance support of embarked squadrons to insure proper supervision and inspection of all helicopter maintenance.

● Consistent and thorough briefings and debriefings of flight deck, hangar deck and squadron personnel with regard to inherent dangers of shipboard helicopter operations. These briefings are conducted in considerable detail immediately prior to an operation.

● Retaining flight deck, aircraft handling and hangar deck personnel in a high state of readiness. Close and comprehensive supervision is maintained over flight deck crews. Enlisted men are carefully screened to insure they are mentally, temperamentally, and psychologically adapted for helicopter flight deck operations. Landing Signal Enlisteds (LSEs) are carefully trained in basic flight characteristics, limitations and capabilities of helicopters.

● A rigid wave-off policy is maintained. "If it's not right, wave-off." LSEs are carefully trained in the correct approach attitude, speed and position of the helicopter prior to reaching the flight deck. Wave-offs are given early in the approach to insure a safe and orderly conduct of the maneuver. *The wave-off signal given by the LSE means a mandatory wave-off.*

● Wind conditions across the deck are observed closely and the maximum winds indicated in Navy doctrines are religiously adhered to, except in case of an emergency. The most advantageous wind for launch and recovery is always obtained by maneuvering the ship as necessary. Convenience of the ship is never considered where a greater degree of safety can be obtained for launch and recovery.

● PRINCETON'S flight deck is divided into fore and aft operating areas with an experienced flight deck NCOIC (Chief) in charge of each area. The Flight Deck Officer and Flight Deck Chief coordinates the activity of each area. The Air Officer and Assistant Air Officer station themselves in an area where close supervision and inspection of the flight deck can be obtained. The Flight Deck Officer, Air Officer and Assistant Air Officer are experienced helicopter pilots. All flight deck personnel are helicopter trained enlisted men with considerable experience in helicopter operation.

● Adequate interval is maintained between helicopters during launching and recovery. Marginal operating conditions for launch and recovery demand greater safety and caution be obtained. Pilots are constantly advised and warned of any hazardous conditions on or near the

USS Antietam

flight deck. Flight operations are conducted smoothly and expeditiously. Pilots are never rushed. Adequate time is always made available for:

(1) Comprehensive and thorough preflight inspection.

(2) Religious use of the check-off list for starting, engaging, disengaging and shutdown.

(3) Preflight and debriefing of all pilots with particular and urgent emphasis being placed on safety.

● Consistent coordination between PriFly and the Bridge to insure optimum safe operating conditions.

● Final control for launch is manifested in the LSE who personally checks to insure safe launch conditions, i.e., all tie-down straps removed, no conflicting traffic, ...

● During Fiscal '60, 8995 day and 1407 night accident-free landings were effected by squadrons on the USS PRINCETON.

Winner, Special Awards, NavAirPac

USS THETIS BAY (LPH-6)

The accomplishment of the ship's Safety Record is the result of competent leadership, superior seamanship, and outstanding airmanship. In addition the below listed factors contributed to the outstanding Safety Flight Record of USS THETIS BAY.

● Rigorous daily training of flight and hangar deck crews, refueling details, and blade folding crews.

● Safety lectures for Air Department and embarked squadron personnel prior to each period of operation.

● High degree of skill and judgment demonstrated by Marine helicopter pilots.

● Outstanding aircraft maintenance by squadron maintenance personnel.

● Vigilant supervision of air operations and deck handling by Air Department officers and petty officers.

USS PRINCETON

Winner, Special Awards, NavAirLant/CNABATra

USS ANTIETAM (CVS-36)

DURING the year 15,405 arrested and 8697 touch-and-go landings were made aboard the USS ANTIETAM by fixed wing aircraft and 2187 landings were made by helicopter aircraft. Only three T-28 accidents occurred, all three of which were pilot factor accidents.

The USS ANTIETAM has had no accident occur to operationally controlled aircraft since 29 September 1959. During this period, the USS ANTIETAM has also far exceeded the past Training Carrier Accident-Free Landing Record of 10,614 accident-free landings. ●

USS Princeton USS Thetis Bay

FLATLEY A

Captain Hugh Winters, USN
Commanding Officer,
August 1959 to June 1960

Captain E. W. Hessel, USN
Commanding Officer, June 1960—

This is the second year of the Fl for the Navy by the Columb Divi Aviation in honor of the late ce A In offering this safety incenti to th ations the company said: "T dec tinually endeavoring to assi in p effective naval force. In this onsid was aware of the importan of s therefor. . . ."

In accordance with OpNa nstru is made each fiscal year to e CV ognition of outstanding achi ment during aircraft carrier ope ions. FRANKLIN D. ROOSEVELT (CVA-42) an 15) — receive temporary cus dy of permanent possession of the iniatu

USS FRANKLIN D. ROOSEVELT—"Key personnel utilize the Flight Deck Two-Way Communications System (the so-called Dick Tracy helmet gear) during all air operations helping to prevent actual and potential safety hazards from developing. While too many personnel utilizing Dick Tracys would defeat the true value of their use, such use by the following personnel has proven highly satisfactory: (a) Assistant Air Officer (Pri-Fly), (b) Aircraft Handling Officer, (c) Flight Deck Officer, (d) Catapult Officer, (e) Arresting Gear Officer, (f) Landing Signal Officer, (g) Repair Eight Officer, and (h) Aircraft directors located in the Fly 1, 2 and 3 areas. . . .

" . . . ROOSEVELT employs no 'gimmicks' or 'sleight of hand' methods which have contributed to its safety record. Emphasis on personnel training, approved and tested methods of operation and upkeep of machinery and equipment are the keynotes. A pleasant, additional contributing factor is the fine coordination and cooperation existing between the ship and squadrons of Carrier Air Group ONE. . . ."

1960 Winner, CVA Class—USS FRANKLIN D. ROOSEVELT (CVA-42)

Runner Up, CVA
USS ORISKANY (CVA-34)

EY AWARDS

ar of e Flatley awards, sponsored
lumb Division of North American
late ce Admiral James H. Flatley.
centi to the Chief of Naval Oper-
d: "T dedicated officer was con-
assi in providing a hard-hitting
n this onsideration, Admiral Flatley
ortan of safety and the necessity

pNa nstruction 3750.9 an award
r to e CVA and one CVS in rec-
achi ment in accident prevention
oper ions. The winners — USS
(CVA2) and USS RANDOLPH (CVS-
y cus dy of an award plaque, and
f the iniature replicas shown here.

Captain J. B. Tibbets, USN
Commanding Officer,
March 1959 to January 1960

Captain R. E. Harmer, USN
Commanding Officer, January 1960—

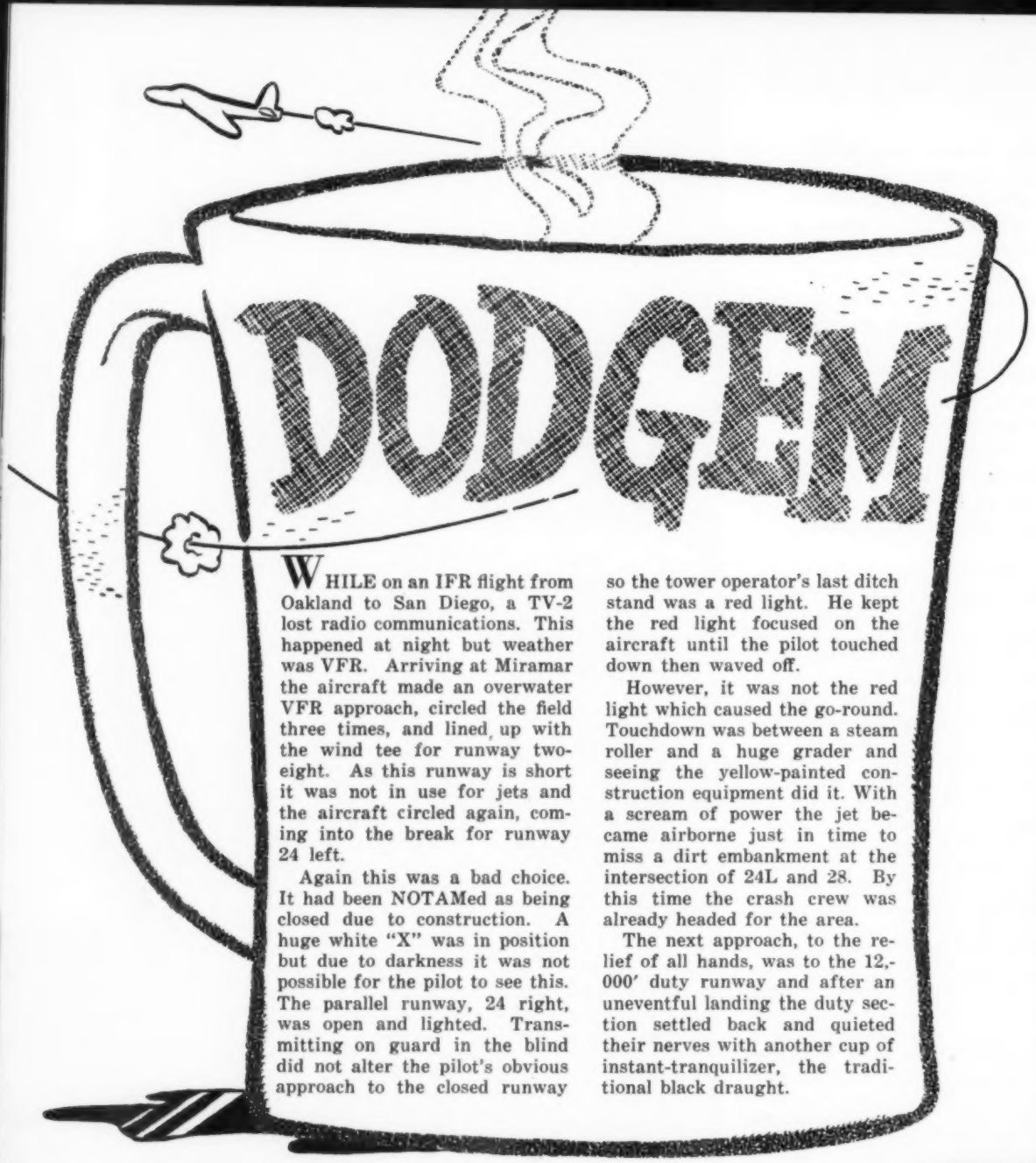
USS RANDOLPH—"This ship has developed a tear drop CCA pattern which is particularly adaptable to S2F model aircraft. It allows a simple approach pattern to be used with any one of the Nav Aids available. Also a method of assigning instrument altitudes and procedures for taking departure and returning to the ship have been worked out which have proven safe and effective. . . .

"Emphasis is placed on allowing ample time to perform any given evolution during air operations. This permits supervising officers and petty officers more time to insure that proper and safe procedures are adhered to at all times. Also for each given evolution a set sequence of events is established. For launches a visual presentation of lights is used. This permits all flight deck personnel to perform their task at a predetermined time. By doing this all unnecessary personnel can be cleared from the flight deck in good order during launches and recoveries. . . ."

Ed's Note: Copies of the two carriers' materials on methods, factors and innovations are being forwarded to carriers.

1960 Winner, CVS Class—USS RANDOLPH (CVS-15)

Runner Up, CVS
USS YORKTOWN (CVS-10)



DODGEM

WHILE on an IFR flight from Oakland to San Diego, a TV-2 lost radio communications. This happened at night but weather was VFR. Arriving at Miramar the aircraft made an overwater VFR approach, circled the field three times, and lined up with the wind tee for runway two-eight. As this runway is short it was not in use for jets and the aircraft circled again, coming into the break for runway 24 left.

Again this was a bad choice. It had been NOTAMed as being closed due to construction. A huge white "X" was in position but due to darkness it was not possible for the pilot to see this. The parallel runway, 24 right, was open and lighted. Transmitting on guard in the blind did not alter the pilot's obvious approach to the closed runway so the tower operator's last ditch stand was a red light. He kept the red light focused on the aircraft until the pilot touched down then waved off.

However, it was not the red light which caused the go-round. Touchdown was between a steam roller and a huge grader and seeing the yellow-painted construction equipment did it. With a scream of power the jet became airborne just in time to miss a dirt embankment at the intersection of 24L and 28. By this time the crash crew was already headed for the area.

The next approach, to the relief of all hands, was to the 12,000′ duty runway and after an uneventful landing the duty section settled back and quieted their nerves with another cup of instant-tranquilizer, the traditional black draught.

The purpose of Anymouse (anonymous) Reports is to help prevent or overcome dangerous situations. They are submitted by Naval and Marine Corps aviation personnel who have had hazardous or unsafe aviation experiences. As the name indicates these reports need not be signed. Forms for writing Anymouse Reports and mailing envelopes are available in ready-rooms and line shacks. All reports are considered for appropriate action.

— REPORT AN INCIDENT, PREVENT AN ACCIDENT —

A KNOBBY PROBLEM

A P5M was on a night searchlight pattern and after a pass over the target the aircraft was climbing to 1500 feet at 130 knots with cruise power set up. The PPC, sitting in the right seat, was engaged in transferring fuel from the hull tank to the service tanks. When securing the fuel transfer he turned OFF the main fuel valve switches to both engines instead of No. 1 and 2 service tank fueling valve switches.

Shortly thereafter, while at 700 feet, a loud silence occurred —both engines quit completely.

Not knowing the exact cause of the engine failures, the copilot advanced mixtures, props to FULL INCREASE, and flipped emergency boost pumps ON. There was no outside visual references so he dropped the nose and maintained a glide of 125 knots. Concentrating on instruments, he commenced a flare at 100 feet indicated altitude, touched down nose-level and bounced. By this time two sets of hands were on the controls and this "team" manipulated the boat to a safe landing.

The similar locations on the fuel panel of the fuel valve switches and the fact that they are identical in size and shape as well as being turned off and on by the same movements, contributed to the cockpit confusion.

DUD

IN THE process of preflighting the dash eight *Cougar* assigned to him, a pilot's attention was drawn to the ejection seat catapult head firing mechanism. The white line indicating the degree of thread engagement of assembly was not visible and the pilot immediately called for investigation by qualified shoot seat personnel.

It was considered very doubtful whether the seat would have fired in the condition it was found. The error occurred while the plane was in temporary custody of a support maintenance activity. The seat had been removed and when re-installed, the firing mechanism was backed off approximately two turns in order to align properly the cable yoke.

Another line of investigation brought out an area of equal seriousness: Six student pilots and four instructor pilots flew the aircraft with the ejection seat in its faulty condition.

IN THE BAG

WHILE instructing students in the Training Command I had an opportunity to observe first hand the effect of hypoxia, and incidentally to see how far people will go to compromise their training.

The hop was an omni/low freq radio nav round robin at 17,500 feet. Estimated time for completion was about 2.3 hours and as this was the student's final check ride in reciprocating engine type aircraft he was eager to get it over with. His jacket showed no trouble except with timed maneuvers in basic and radio instruments at altitude.

For about 45 minutes the hop was average; then we went zipping past our enroute holding fix. All instruments indicated station passage and ETA was right on schedule. After 30 seconds or so, outbound on no particular heading, I heard a grunt and some mumbling from the rear seat and the aircraft started a gradual turn of sorts.

Over the intercom I observed very politely that I was happy to see he recognized station passage and how about doing something about a holding pattern and voice report. We ambled about the sky for a few minutes. I thought he had dropped his kneepad and couldn't fly and search at the same time so I said I'd take control until he could get squared away and relaxed. When we were over the station again I gave him the controls but he still couldn't keep a holding pattern.

Right then I told him to pop the hood and I took control. I was all set with a verbal blast; remember, he was supposed to be capable of flying a final check, when I saw that he had no oxygen mask on. When asked about this he replied that he always took it off when he went under the bag (ah, this answers his jacket comments about difficulty with timed maneuvers at altitude). Putting the mask on, he soon felt fine but couldn't remember very much.

I felt no sorrow about giving him a down. A tremendous amount of publicity has been devoted to hypoxia and what causes it. This student had received many lectures and had gone through the pressure chamber prior to this flight.

Sorta makes you wonder, doesn't it?

CONFESSION

THEY say that any crime, other than a felony, is erased after seven years but I have hung on to this tale for four years and it is by no means erased from my conscience. The article "The Right-Hand Man" in the July issue prompted me to review it in my mind and it was as fresh as ever.

I was plane commander of a P2V, departing Port Lyautey on a routine afternoon patrol. An IFR departure was filed since the field was covered by a stratus layer but we were assured through PiReps that the area north and the op area were CAVU. After takeoff we entered the clouds at 900 feet and broke out on top seconds later at 1000 feet. From altitude looking down the area was CAVU all right; it seemed that the field had its own personal cloud cover about 10 miles wide.

Proceeding on course I soon ordered the radar fired up; and that's what it did, it departed in a puff of blue smoke. Radar was all-important for the patrol so we made a 180 back to base. The cloud patch was still hovering over the field and a little fog was making up over the water but it was still clear above 1000 feet. On an ADF approach we broke out VFR at the same 900 feet.

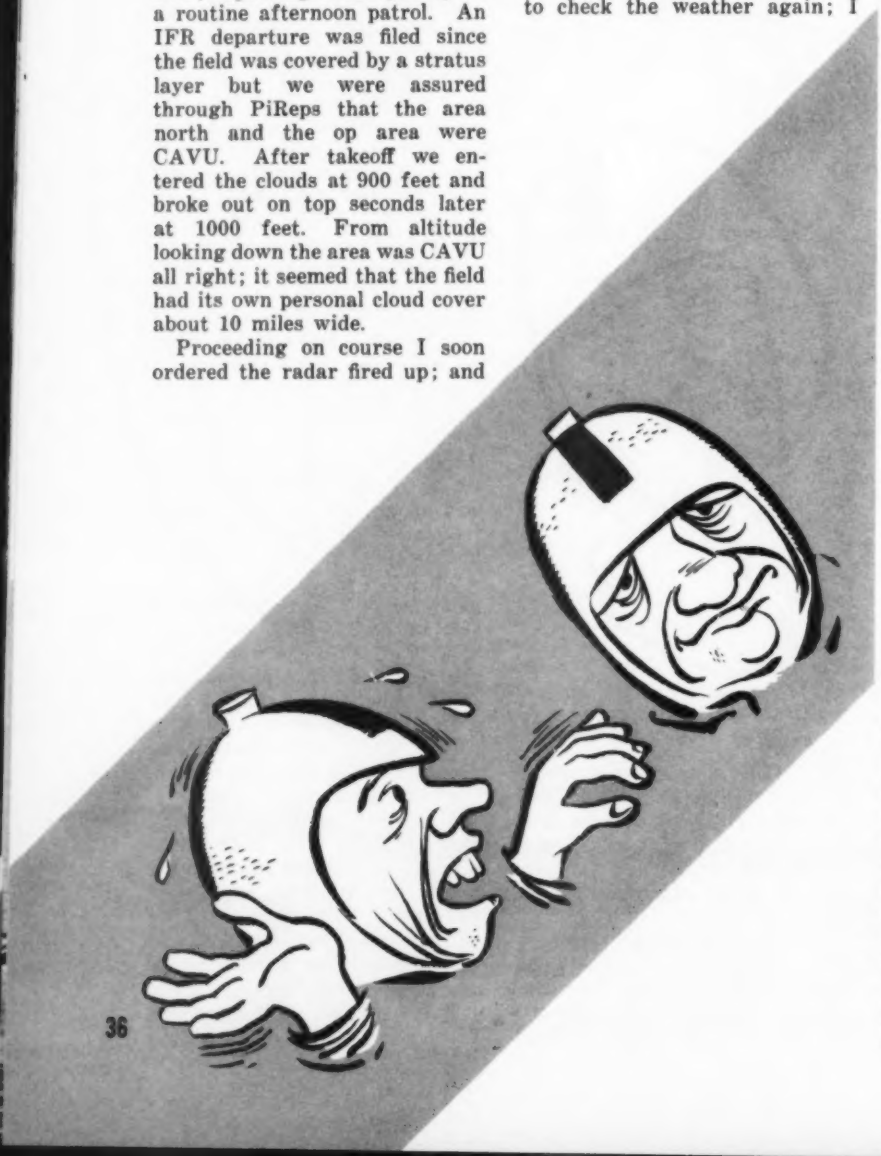
Switching planes and refilling took about 30 minutes. As we were already late I didn't bother to check the weather again; I figured I probably had a better picture than the forecaster as I had just recently come down through it.

Giving our new chariot full bore, two turning and two burning, we roared into the overcast. I began a shallow turn as I entered the soup so as to be on course as soon as possible. My instrument scan was negligible since I expected to break out on top in a few seconds.

The next thing I remember after starting the turn was the copilot's rather nervous call "Level the wings!" Startled, I looked to find I was in a 45-degree bank to the right at 1500 feet, over a 900-foot ridge, *descending!*

I rolled the wings level with basic instrument procedures and continued an IFR climb finally breaking out at the unexpected altitude of 3500 feet. In 30 minutes there had been a fast and unexpected change in weather and my trying to second-guess it was a dumb trick, as bad as thinking VFR in IFR conditions.

Thanks right-hand man, wherever you are. Advice and assistance are always appreciated by this driver. It takes more than one to make a team.



UNREADY DECK!

A NIGHT carrier refresher hop was launched at twilight with this Anymouse as No. 4 in the flight. Briefing was thorough and we were to take a double interval in the pattern. Prior to launch the leader asked when the deck would be ready and was told it would be ready about five minutes after launch. Therefore when two miles ahead of the ship he commenced his turn downwind; three minutes remaining for the expected ready deck time from PriFly.

The lead pilot made his first pass right at or soon after the predicted ready deck time. At

the 45-degree position he called "no meatball" and assumed the mirror was obscured by one of the ADs which were to be pulled forward. He took his own waveoff.

The situation was the same for the No. 2 and 3 planes.

By the time I came to the 180 the sky was darker but there was still some light. I continued on the gages to the 45 spot and picked up the meatball. Reporting "meatball" I added that there were no datum lights. There was no reply but very shortly the datum lights came on. I called them in sight, adding the fact that the brilliance was good. There was still no transmission from LSO or tower. A real quiet crew I thought, must be pretty efficient.

My approach continued in good shape but just before passing the ramp the red waveoff lights on the mirror flashed. This development was unexpected and revolting. I frantically added power to go around and made it. As I staggered past the landing area a quick glance was all that was needed to understand why the waveoff was given. Still parked aft on the port side, wings folded, was an AD.

After proceeding upwind I called the LSO and asked him not to give such a late waveoff again, please. Again and yet there was no reply. "Efficient? No, they must all be deaf-mutes! And blind besides!"

Some time after this the tower came on the air for the first time and gave the leader a "Charlie." After the refresher period was finished, without incident, we found out that a comedy of errors had taken place.

First, the tower's expected ready deck time in no way implied that we were to commence making passes. Since we did however, the tower expected us to take our own waveoffs.

Second, the first three planes

did not spot the meatball simply because the source lights were not turned on. I saw it because the arresting gear officer turned the lights on for a test. Shortly after this he turned on the datum lights for the same reason. It was coincident that they came on after my call, but it led to dangerous assumptions.

Third, the one remaining AD parked aft prevented the LSO from manning the platform.

Fourth, the tower was not aware that the LSO was not on the platform.

I learned afterward that the only thing which prevented me from landing on the parked AD, a tractor and eight men, was the fact that I received the waveoff from the tower through a circuit which luckily had been installed just a few days prior to this incident.

SLOPPY

DURING CAVU weather a transient jet was making a practice GCA to a temporarily closed runway. The pilot was cleared for and acknowledged a low pass. As the jet reached three-mile final the tower operator cleared an SNB to cross the closed runway near its mid-point. The *Beech* was slow to commence crossing and the jet pilot apparently forgot or never really understood his clearance. A tangled situation nearly resulted as the jet touched down for a touch-and-go, barely clearing the sluggish SNB.

In the process of untangling the situation some simple omissions and errors were found to have caused the near-miss. Although local pilots knew it and GCA had been advised that the runway was temporarily closed, the visiting Air Force pilot was not informed of this fact. Clearance for the low pass was early in the run but the meaning became confused in the pilot's mind when GCA continued giving advisories all the way to touchdown rather than advising a waveoff at GCA minimums.

But even eliminating the pilot's error in touching down leaves him holding several others; touchdown was 3500 feet from the approach end of the runway. A slow moving aircraft was crossing the runway 2500 feet ahead.

It all indicates some fog in the cockpit and GCA truck.

READ AND HEED

AT 33 THOUSAND feet, 280 knots indicated, the pilot of an A3D engaged the autopilot. After a period of 10 to 20 seconds the yoke turned over hard right and the big bomber made at least two very rapid aileron rolls to the right before the autopilot could be disengaged. Three thousand feet of altitude was lost but the rolls appeared to be coordinated. The accelerometer read 2.8 positive Gs and .7 negative but no serious structural damage was done.

Reason for the aerobatics—the pilot overlooked a placard on the trim meter located on the autopilot control pedestal. This placard read "Autopilot Inoperative."

Have a problem, or a question?

Send it to **HEADMOUSE**

he'll do his best to help.

MiniReg Underwater

Dear Headmouse:

In an article called "Underwater Escape" in the July, 1960 APPROACH breathing underwater with the bailout oxygen supply was discussed in connection with ditching the F8U. Do you have any more information on the underwater capabilities of the miniature oxygen regulator?

ANYMOUSE

► The Air Crew Equipment Laboratory of the Naval Air Material Center has reviewed the procedure for underwater testing of miniature mask mounted regulators and repeated a series of underwater tests first carried out by ComNavAirPac. In the project ACEL considered also the chest mounting of regulators.

The following information is quoted from a letter from ACEL to BuWeps concerning the project results:

"An evaluation program was conducted to determine the feasibility of the relocation of the miniature regulator to the chest mounted position and its ability to be as functional as an emergency underwater breathing unit. In addition to underwater testing the chest mounted miniature regulator, a reevaluation was conducted on the mask mounted regulators for underwater use.

"Three subjects using the Firewel Part No. 1732-3; the Pioneer-Central Division, Bendix Aviation Corporation Part No. 29211-B1; and the Robertshaw-Fulton Controls Company Part No. 226-20004 miniature oxygen breathing regulators located at the chest and mask were subjected to absolute pressures of 21.2 lbs/sq. in. (equivalent to about 15 feet of water depth) in a swimming pool. A 15-inch length of ⅝-inch I.D., corrugated breathing hose was connected directly between the regulator and oxygen mask for chest mounting. The regulators were first retained at the chest and then allowed to hang free. While underwater the subjects oriented their body position in relation to the regulator to allow the regulator to be above or below the subject's mouth. There were of course various changes in the breathing pattern of the individual subjects due to the change in pressure relationship between the regulator and the mask. The regulators, however, were found to be satisfactory for the short period needed for a pilot to make an emergency underwater escape. It should be pointed out that the regulators were not intended for use as SCUBA equipment; they impose greater breathing restrictions but are adequate for emergency use.

"The subject regulators have been found to be satisfactory for emergency underwater escape system use while either in the mask or chest mounted position."

Very resp'y,
HEADMOUSE

MiniReg Mounting

Dear Headmouse,

In our F8U Squadron, of which I am the Leading Rigger, some of our pilots, through convenience, desire to have the Firewel regulator mounted at the end of the flex rubber hose of the A13-A mask.

I have noticed in your publication that all pictures and discussions of the miniature regulator show it mounted on the mask. I would like to know if there are any Navy directives which prohibit our type of mounting.

VALENTINO ALVARADO, PR1
VF-91

► There are no specific directives covering mask mounting the regulators in the F8U type aircraft. However BACSEB 28-57, paragraph 6, sub paragraph a states "The miniature regulator Firewel Part No. 1732 is designed to be integrated with the A-13-A oxygen breathing mask as shown in Figure 11, etc."

NASC recommends it be mask mounted for the following reasons: On high speed, high altitude ejection there is a strong possibility of the hose elongating and breaking. If this occurs the pilot would lose his oxygen supply and the results could be disastrous.

BuWeps is in the process of procuring K-4 kits which will contain the necessary equipment and non-stretching hose to chest mount the miniature regulator.

Very resp'y,
HEADMOUSE

COLD WX NOTES

WITHIN weeks operations in frigid weather will be increased greatly. When the airplane's environment gets near the 32°F mark, it's time to show due regard for the cold-weather elements that can play havoc with every aspect of flying and maintenance support.

This is the time to renew familarity with the effects of low temperatures and wintry storms on instruments and power plants, on flight including landing. Doing so really will make a difference when, for many units, November days and nights produce dropping temperatures.

How to prepare for the days to come? Use existing publications on winter flying, cold-weather equipment and gear, snow-removal, protective clothing. Put the pilot and maintenance winter-operations reading files into circulation. Make these topics the subjects of lectures and discussions for pilots:

► The need for flight instruments to be thoroughly warmed up before takeoff into sub-zero temperatures.

► The complete anti-icing and de-icing system of the aircraft.

► How to detect and combat carburetor icing and jet engine icing.

► Know the icing level.

► What to do when encountering severe icing, freezing rain, and extreme turbulence.

► The value of inflight reports of unusual and unfavorable weather conditions, particularly heavy-icing turbulence.

► Pilot technique when landing and after landing on snow or ice.

► Crosswind landing on icy runways.

► Pilot knowledge of oil-dilution systems and cooperation with maintenance personnel in using them.

► The need to keep physically fit and understand cold-weather-survival technique.

► Personal equipment and cold-weather survival.

Every commander, inspector and experienced flyer realizes that winter flying demands extra care. This, and the required precautions, must be instilled in all, but particularly in the less experienced aircrews.—*USAF TIG Brief*

Water, Slush and Snow on the Runway

It is well known that standing water, slush, and wet snow on the runway have a detrimental effect on the takeoff performance of aircraft. Not so well known is the extent that performance is affected. Several years ago, a propeller-driven aircraft was unable to accelerate to lift-off speed because of excessive slush on the runway. Takeoff was abandoned, but the aircraft ran off the end of the runway before it could be stopped. During the past winter, a *Boeing 707* aircraft cleared a concrete barrier at the end of the runway by an estimated five feet following a takeoff in 1½ to 2 inches of wet slush and snow on the runway.

Operation of turbojet aircraft in these conditions is much more critical. They are usually weight limited by runway length, and the effects of water, slush, or wet snow are greater because of the longer takeoff runs and higher takeoff speeds. The time check to determine whether takeoff can be safely continued can be misleading as the first portion of the runway may be in better condition due to previous takeoffs by propeller-driven aircraft. In the *Boeing 707* incident cited above, the aircraft had reached 100 knots one second earlier than planned, but normal acceleration was thereafter retarded when the aircraft entered a portion of the runway apparently not previously used by other aircraft.

There is no reliable information to determine specific increases in ground-roll distances. The National Aeronautics and Space Administration has been requested to conduct research on the effects of water, slush, or snow on takeoff performance, but it is difficult to establish reliable performance criteria because of the differences in type, density, and depth of slush and wet snow.

Another serious problem is aircraft structural damage caused by slush during takeoff. Several reports have been received of damage to aircraft at the higher takeoff speeds.

Takeoff performance is predicated on clean, dry runways, and effect of water, snow, and slush is unknown. Therefore it is considered hazardous for turbojet aircraft to take off when there is a measurable amount on the runway. The takeoff performance requirements of SR-422, 422A, and 422B can only be guaranteed when runways are cleared to the pavement.

—*FAA Ops Div. Circ. Memo 59-73*

MONITOR

EXCERPTS FROM SOME OF THE NAVY'S SAFETY COUNCILS THROUGHOUT THE WORLD, WHO PROVIDE LOCAL LEADERSHIP AND EMPHASIS TO THE NAVAL AVIATION SAFETY PROGRAM.

FUR Movies

Importance of usage data, proper procedures and correct fill-ins of FURs is being published. It was recommended that the FUR system film be shown to all maintenance personnel. (Each squadron was directed to obtain the FUR movie and show it to all maintenance people prior to the next quarterly session.)—*Whidbey Area*

Exposure Suit Test

The Aviation Safety Officer has arranged for each pilot and crewmember to personally test their exposure suit in the station swimming pool. This arrangement was met with total agreement, as the fact remains that a vast majority of the suits have never been subjected to actual immersion by the wearer, and reassurance as to its reliability under actual conditions will be a great confidence factor.—*FAirWing Six*

Use of Angle of Attack

It is felt that more stress should be placed upon maintenance and pilot use of angle-of-attack instruments installed in high performance aircraft. The angle of attack should be the primary instrument and the airspeed secondary during all landing approaches.—*1st MAW*

Deferred Emergency and Its Meaning

It was agreed that "deferred" would not be used. A pilot will either state he has an emergency and wishes to come aboard or he will keep quiet. If by any chance the word "deferred" is used, the plane will be treated as an emergency regardless and be brought aboard.—USS *LAKE CHAMPLAIN*

Action Review

A review by each squadron of aircraft accident reports for the past two years was suggested. This review would ascertain if all applicable recommendations by the accident boards had been implemented and to determine what action had been taken on recommendations beyond the capacity or authority of the squadron. Where there appears to be worthwhile recommendations that have not been acted upon, a separate letter requesting action to be taken at higher command levels may be appropriate.—*Northern Area, Quonset*

Clear the Catwalks

Pictures of helicopter deck crashes showing the fire and confusion that results from a crash were passed around to emphasize the need for keeping spectators out of the catwalks.

Keep unnecessary personnel out of the catwalks during flight operations. This applies to gas crews, squadron personnel not connected with the particular evolution taking place and to flight deck personnel not immediately involved.—USS *LAKE CHAMPLAIN*

Don't Wait For Directives

All P2V squadrons will receive directives designed to prevent a recurrence of the "forged chain of events" described in the December APPROACH, page 10. "But do not wait for these directives," . . . "go ahead with preparation of your own directives requiring closest command attention to flights of this type." Commander Fleet Air Wing Three concurred with the AAR investigating board that the error in clearing this flight was *not* a minor one. "The clearance received from the Operations Duty Officer was the last check on the ground which could have prevented this accident; the pilot himself, of course, had the final opportunity to prevent it through the use of good judgment and flying skill."—*Brunswick Area*

Turn in the Forms

All units have a very complete and adequate system of clearing instructors to go on cross-country flights, however only one unit requires the pilots to turn in their completed navigation forms upon return. We know some of our pilots are planning good flights but are actually flying extreme ranges. It is believed that this practice can be considerably reduced by having each pilot turn in his completed navigation forms showing gas stops and amount of gas taken on board. This would in no way stop the pilots from returning a different route or making a different refueling stop due to weather, mechanical or other considerations. It would, however, make a pilot think twice before disregarding his requested flight plan unnecessarily.—*CNABaTra*

Spectator Interest

An accident involving a HUS which resulted in a fire on the flight deck was discussed and the following points brought out:

The sequence of events causing the fire are believed to be:

Engine overspeed.

Cooling fan disintegration.

Fan blades severed main fuel line, control cables and electrical wires.

Spark set off fuel from severed main fuel line.

The primary factors contributing to the control and final extinguishing of the fire are believed to be:

Immediate application (less than 10 seconds) of large volume of water and foam.

The large volume of water under pressure, kept the magnesium alloy cool and prevented fully developed magnesium fire from occurring.

The fuel cells did not rupture, thereby reducing the intensity of the fire.

There were only two minor burn injuries, that resulted from the accident. However, there were an unknown number of spectators throughout the flight deck and super structure, who could have been injured by missile hazards from the disintegrating fan, or flaming gasoline if the fuel cell had exploded. Some method must be devised to aid the Air Officer in keeping these areas clear of nonessential personnel.

The need of some means for pushing the aircraft over the side when an uncontrollable magnesium fire develops is apparent—USS BOXER

For most Navy pilots our newest executive aircraft, the *Aztec*, designated the UO-1, will definitely be . . .

A CHANGE OF PACE

IN A CHANGE of pace from the usual article on how to fly a particular aircraft, APPROACH takes pleasure in conducting a guided tour of an airplane which does not require the terms Mach, sonic, thrust, sink rate or swept wing. As a further change of pace we promise not to refer to this delightful machine as a monster, beast, bear, hog or bird.

Not that we're against such terms or even wanted a change of pace in story writing; it's simply that the UO-1 *Aztec* actually *is* a change of pace for the naval aviator and should be treated as such.

For those who may not have heard about this new member of the hangar set, and to cut away some of the rumors about the program, a few facts may be welcome. With a gross weight of 4800 lbs., the UO-1 *Aztec* is in the class commonly known to civilian pilots as "light-twin." This is a rather loose term and the SNB at 8700 lbs. is generally regarded as the senior member of this class.

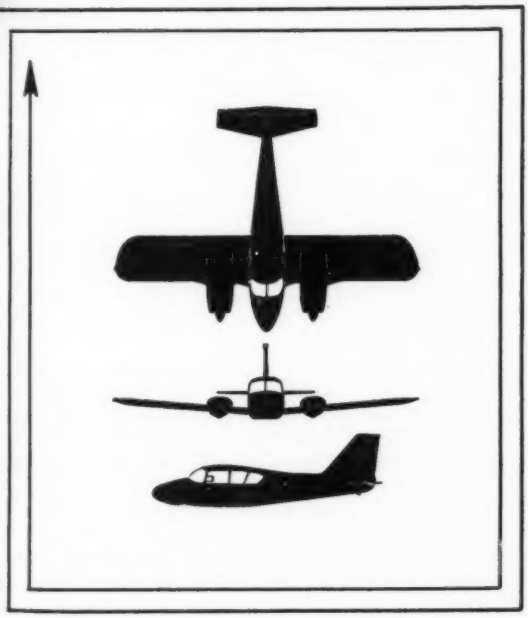
Twenty UO-1s are scheduled to come to the Navy so far. Basic delivery will be made to naval air stations with one or two units per NAS and most of the stations which will receive *Aztecs* have already been notified.

The accompanying photographs and drawings provide a pretty good idea of the size and shape of the *Aztec*. Don't be too quick to judge this book by its small cover. If you believe speed and performance come only with plenty of horsepower this airplane will provide some surprises with its 500 total horsepower.

Purchased from Piper Aircraft under what has come to be known as off-the-shelf procurement, the *Aztec* is for all practical purposes, a civilian model with military markings. We bring this up to point out a design concept which may head off some annoyance with the cockpit arrangement. The UO-1 was designed and engineered as a one-man airplane. Dual controls are installed of course but the underlying philosophy was to provide maximum control access and convenience to the pilot in the left seat. Only the man in the right seat will have any complaint—he won't have much to do.

Other off-the-shelf features include VHF radios, brakes only on the left side, and no provisions for parachutes or shoulder harness. The radio has 500 channels to choose from. There is also a 20-channel standby transmitter. A steerable nose wheel linked to the rudder pedals eliminates the requirement for dual brakes. All ground maneuvers are controlled easily with rudder pedals.

With a "U" designator, the *Aztec* is first and last a light logistic and administrative aircraft. Already it is being informally referred to as a "replacement" for the SNB. That feeling may be inaccurate or misleading as the *Beech* will be with us for a few more years. Also, few planes can take the place of the "Slow Navy Bomber" in spurring pilots to keep their landing proficiency high. By matching the SNB against the *Aztec* however, you come up with an easy and well-known yardstick with which to measure the qualities of the *Aztec*. Any comparison here is strictly a convenience and not a disparagement of the faithful, if sometimes cantankerous, old SNB.



In brief here is what the UO-1 can do: Take a total of four people with 200 pounds of baggage and fly them at 175 knots for 750 nautical miles with 45 minutes reserve at destination. That's equal to trips such as Whidbey to Moffett, Corpus to Olathe, or Memphis to Norfolk. One major difference between civil and Navy versions is the addition of a gaseous oxygen system to the UO-1. With an advertised service ceiling of over 22,000′ it needs an oxygen system to make full use of its altitude capabilities. The factory says the *Aztec* climbs 750 fpm at 12,000′ altitude and still has 200 fpm climb at 20,000′. Absolute ceiling is 23,750′. For West Coast IFR this altitude capability is good news. In the midwest and east you can begin to think about getting on top of a lot more weather than with the SNB. The oxygen supply takes care of four people for five hours.

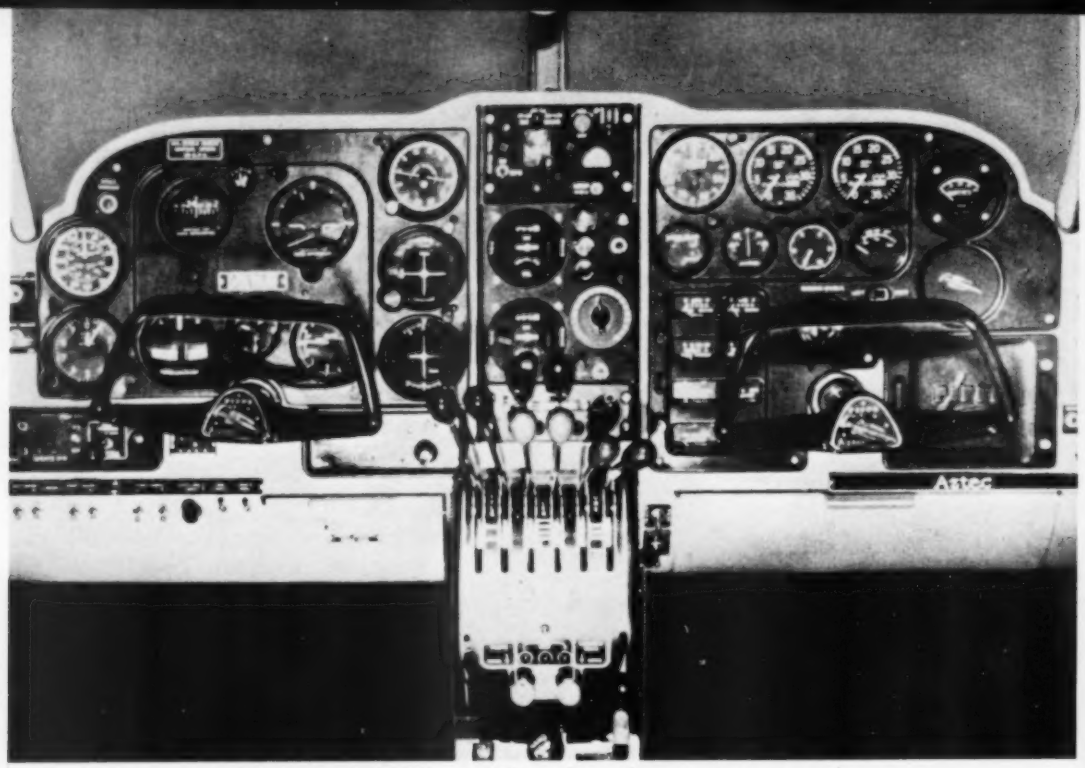
Sitting in the cockpit, one of the first things you will notice is the lack of an intercom. "Zounds! None? A blueprint mistake, perchance?" Nope. Even with takeoff power blasting away, conversation in the cabin is almost at living-room level. In addition to the normal headphone and microphone jacks a cabin speaker for radio receivers is standard. A selector switch gives the pilot his choice. The speaker is a boon to those crushed cross-country ears and its popularity seems assured.

A glance across the panel shows flight and nav instruments on the left side, communication and nav aid controls in the center, and engine instruments on the right.

All trim tabs are located overhead. No aileron trim is provided. The rudder trim will cause no confusion but the elevator trim will seem strange in this overhead position.

Another of the things you will notice is the excellent cockpit visibility and how close to the ground you sit; there is a quick impression of riding in a hardtop convertible. Remember this nearness to the ground when flaring for a landing, otherwise the first few will be dropped in.

Continuing on around the cockpit we come to the control pedestal, which is smaller but similar in appearance to the SNB. Photographs do not emphasize the differences and you must throw out all SNB reflexes when you fly the UO-1. From left to right the controls are throttles, propellers, mix-



Simple and complete . . . yet different from what we are accustomed to.

tures. Gear and flap handles are in the same position as on the *Beech* but are *reversed;* flaps on the left and gear on the right. Standard control handles are provided, an airfoil section for the flap control and a miniature wheel for the landing gear control.

See why old reflexes or habits can't be depended upon! On takeoff the helpful copilot backs up the throttles (SNB style) and actually is keeping the props up. When airborne the pilot reaches for the "throttles" in the center of the pedestal to make his first power reduction and—varroom." It's startling to hear the rpm dropping off as the props bite bigger and bigger chunks of air. An overboost in this situation is easily recognized and corrected, and according to factory pilots, is not serious enough to cause engine damage unless it continues for an extended time.

The position of gear and flap controls is another matter. In moments of stress or concentration, as in a missed approach, it will be possible to revert to SNB habits and reach for the gear, pull the handle, then find it was actually the flap handle. The other possibility is less likely as the airplane has a spring-loaded guard in addition to the standard oleo safety feature to prevent inadvertent gear retraction. It is not the intention of this article to distort these control differences out of proportion but the differences and possibilities for error do exist: Simple awareness of them is enough to prevent serious mistakes.

Quite a few pilots have had adventures with the SNB fuel system. They flipped the gage to a full tank but forgot to switch the tank selector. Darkness or instrument conditions always magnified the thrill when the engines finally ran out of gas and sputtered into silence. In the *Aztec* this possibility is eliminated. The gage and tank selector are married. Changing tanks automatically changes the fuel gage.

Perhaps most important for *Beech* drivers who end up in an *Aztec* is the tricycle landing gear. There is no need to explain this any further, except to say it will reduce suspense both in the control tower and the right seat.

Engines on the *Aztec* are the same breed as those in the Bell HTL and Marine Corps OE liaison planes—horizontally-opposed and air cooled. These in the UO-1 are manufactured by Lycoming. Minimum octane is 91/96 but 100 octane can be used continually if standard fuel is not available. In a real bind you can burn one load of 115/145 but the next has to be 91/96 or 100 octane. Differences between horizontally-opposed and radial engines are slight. The horizontally-opposed engine tends to be simpler in operation.

Boost pumps are provided and are used as in other aircraft equipped with them. Starts are made in full rich.

Above 40°F use of the individual engine primers may be omitted and the manufacturer says pump the throttles before cranking the engines; two to three strokes with a warm engine and five to six with a cold engine. There are no cowl flaps and no oil cooler controls. You need not warm up for more than two minutes in warm weather and four minutes in cold weather. The engines are ready for takeoff when the throttles can be opened without engine faltering. In winter ground operations especially, the indicated oil temperature is not a true measure of heat in close-cowled engines such as on the *Aztec*. If it is necessary to delay takeoff for ATC clearance or traffic the engine manufacturer says operate at 1400 to 1500 rpm to provide ample cooling and minimize spark plug fouling; this setting also insures electrical power since the generator cuts in at 1300 rpm.

When you come to the feather check on ground runup some words of advice may be helpful. There are no feather buttons. Feathering is done by pulling the prop controls back to full decrease and then further back and down through what is best described as a friction detent. It takes extra hand pressure to push the prop control through close fitting fiber strips into the feathering range. It is unlikely that inadvertent feathering could take place even though the system is simple to the extreme.

These props are really "quick feathering"; from high pitch to full feather in about three seconds. To make the feather check pull back normally to FULL DECREASE then make a fast chopping or dipping motion through the detent down into feather position and back up again. Starting from a normal 2000 rpm a quick check will drop the tach to 1500. If you're a bit slow the rpm will go down to about 800 and the engine immediately lets you know about it, shuddering and shaking in protest. There is a tach for each engine, incidentally. This may be distracting the first few times you try to synchronize the props in cruise condition.

Piper has made it easy to remember the minimum single-engine control speed. A discreet placard is placed on the instrument panel in front of the left seat. The airspeed indicator itself will cause some gripes. Navy pilots have been using knots for so many years they have forgotten there was such a thing as miles per hour. However it was only a few years back when civil aviation began working in knots, and this solely for IFR. Thus the indicator of the *Aztec* reflects a compromise; both knots and miles per hour are marked on the face of the instrument. The outer scale is marked off in mph and the inner, and most important, *smaller* scale is calibrated in knots. Therein lies a possible source of confusion. With the pilot thinking in terms of knots, his eye tends to be drawn to the larger outer scale representing miles per hour. One simple solution is to blank out the mph scale with tape or paint.

Many airplanes have been described as easy to fly but the UO-1 really is, as any pilot who gets his hands on one will soon discover. Consequently, only the high spots of the *Aztec's* mannerisms and performance will be mentioned.

Takeoff is with throttles to the stops. The engine has no impellers or blowers and the manifold pressure gages are mainly for setting up cruise power at altitude. Full bore at sea level will give 2575 rpm and a little over 29". The steerable nose wheel does wonders for straightening out the takeoff roll, and the landing roll for that matter. With 70 knots indicated, a little back pressure brings the *Aztec* into the air and by the time you read this far it is approaching that desired 95 knots which is max rate of climb for single-engine.

Another five knots brings the max rate of climb for two-engine performance. Between 100 and 200 feet off the deck you will feel ready for the first power reduction; back to 24" and 2400 rpm. If you want to hold 100 knots the UO-1 will be going up 1600 fpm with this power but the nose position is so high that forward visibility is compromised. So a more comfortable climbout with adequate forward visibility is 115 to 120 knots. This gives 1000 fpm.

Cruise performance is subject to so many factors that only a few generalities are of interest at this stage. Cruise rpm varies from a maximum allowable of 2400 to a minimum allowable of 1800. With 25" or more, rpm should not be less than 2000. Piper's rule-of-thumb for this engine recommends that mp should not differ more than four inches from the rpm in hundreds. For example, at 2100 rpm no more than 25", at 1800 rpm, no more than 22".

Engines are leaned manually. Normally this is started at 5000 feet above sea level. Below 5000 feet leaning is at the pilot's discretion when less than 75 percent power is being used. Civil operators using the same engine have found it can be leaned from seal level on up without damage. To get the advertised fuel consumption and range it must be leaned to what the engine manufacturer calls "best economy."

There are no cylinder head temperature gages but the manufacturer claims that since the *Aztec* engines run cold no problems should be encountered. To get best economy set up the desired power and simply come back on the mixture "until the engine begins to run rough." Then, continues

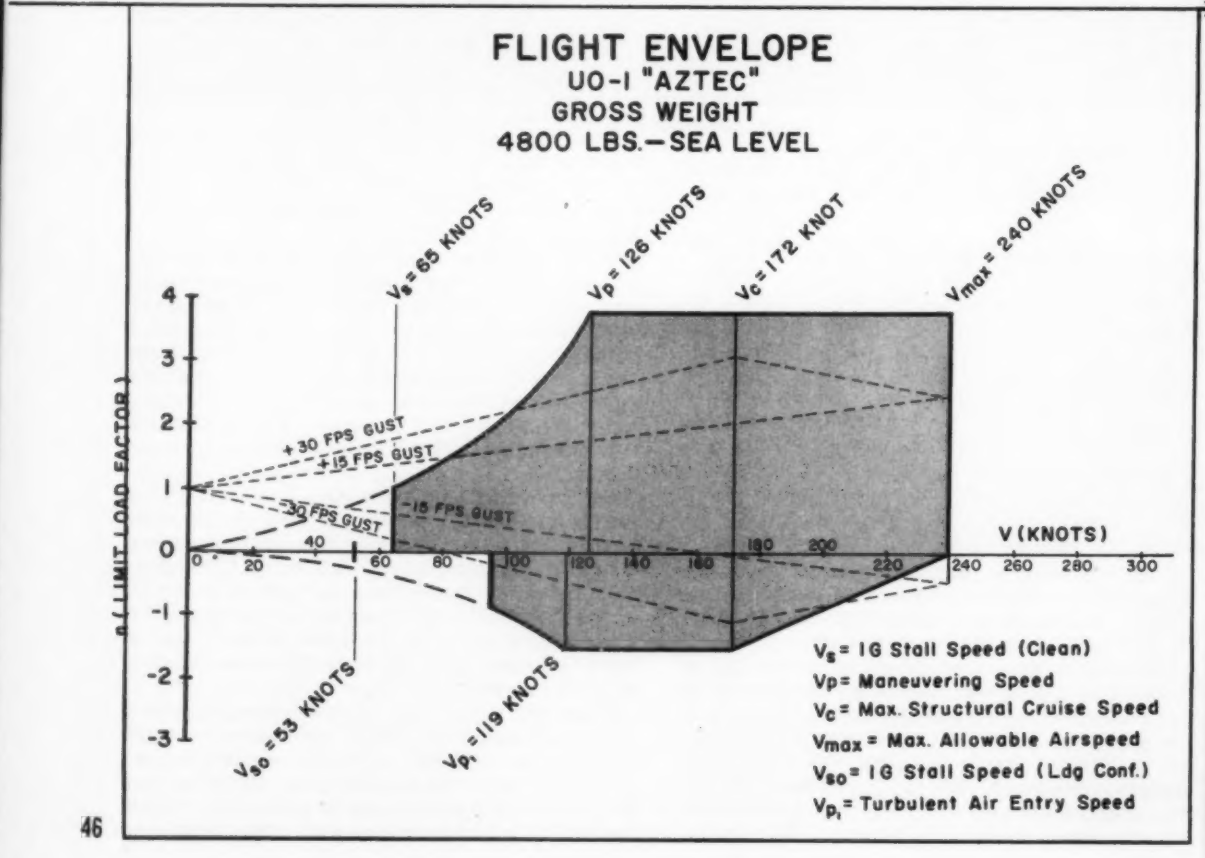
the engine manufacturer, "enrich the mixture by moving the control forward just enough to smooth out the engine." A perfectionist theory says take your feet off the rudder pedals and glance at the turn and bank while pulling back on the mixture. An unbalanced flight condition is the first indication of power loss.

A chart furnished with each aircraft gives various settings of manifold pressure and rpm for specific power percentages but a few standard settings will probably develop for convenience. The following settings are selected merely as examples. Max continuous cruise is 75 percent power. At 2000′ this amounts to 25″ and 2300 rpm. You get about 165 knots for some 30 gallons per hour. A more economical setting is 65 percent power—22″ and 2300 rpm, and the UO-1 loafs along at 155 knots for close to 24 gallons per hour.

Optimum performance altitude is 7000′ with 75 percent power which amounts to 22.5″ and 2400 rpm. With this you get 175 knots for 750 nautical miles and have a 45-minute reserve. Pushing on up to 10,000 feet drops the max available power to 65 percent, about 20″ with full throttle. However the TAS drops only about five knots, to 170, and you get 200 more miles range with the same reserve.

Airspeed in the traffic pattern is just slightly below SNB standards. Structural limit speed for dropping the gear is 130 knots but to ease the strain on the machinery it is best to use 125. The *Aztec* is clean and even with power hacked all the way off it takes a surprising length of time to slow down. For best results in slowing to gear speed at the usual spot in the traffic pattern enter the break at 135 to 140 knots.

Downwind optimum speed is in the neighborhood of 90 knots, slowing on final to 80 or 85 depending on weight. Factory pilots recommend nothing under 75 knots until the field is made—that way you are always on the safe side of the single-engine control speed. Unless you are dragging it in, only a hint of power (about 12″ with props to 2400 rpm) will be needed. Holding even



this slight power all the way to the runway cushions the touchdown. It takes a little getting used to but the *Aztec's* normal approach is hardly more than a glide toward the field.

A comfortable and practical threshold speed is 70 knots and touchdown follows at around 60 knots. The stall warning system is a small but attention-getting red light at the left edge of the panel. To make this light flicker on landing, the *Aztec* must be deliberately held off the runway in a noticeably nose-high attitude. Straight and level, gear and flaps down, with power off, the UO-1 stalls at 53 knots. In a 30-degree bank with 75 percent power, it stalls a hair above 50 knots. It will take a lot of determination to get into slow flight trouble with this aircraft.

When it comes to single-engine work the UO-1 has the benefits of a direct ancestor, the Piper *Apache*, 2000 of which are in service, plus the operational experience of earlier model light-twins. All this has resulted in single-engine qualities which pilots will have a good reason to like. Much of the checkout will be devoted to this work; therefore it is logical to start off by mentioning "zero thrust," an inflight power setting of 10" and 2200 rpm, which simulates a feathered engine. If unsimulated trouble appears during practice the throttled engine can be restored to service instantly.

For purely demonstration purposes the airplane has been flown off the runway with a simulated feathered engine. Full power was used to get it rolling, then the right engine was reduced to zero thrust. It was held down until it accelerated to 87 knots indicated; then forward control measure was released and it flew itself off. With gear up, airspeed at 105 knots, initial climb was 1000 fpm. It is important to again note that this was a demonstration, at light weight and with some zoom effect from the higher than normal airspeed. At full gross weight the climb would only have been slightly above 350 fpm.

From that high point in performance we come to what Navy pilots may consider the low point of the UO-1 program, especially if they have let their arm muscles get flabby. The one engine-driven hydraulic pump is mounted on the port engine.

It should be quite clear what this means. If the left engine is feathered it takes about 40 short strokes of the hand hydraulic pump to raise the gear. Depending on your pumping speed the retraction time runs from 15 to 25 seconds. About 20 seconds of hand pumping lowers and locks the gear. In addition to the hand pump a CO_2 pneumatic system provides a one-shot emergency lowering of the gear. The flaps also work from the hand pump when the left engine is inoperative.

In case it is impossible to get the wheels down with normal or emergency procedures keep in mind the fact that one-third of all three wheels extend outside the aircraft structure. Belly landings are made on tires instead of metal. The Piper people maintain that the brakes will function if you come rolling down the runway this way (Imagine the consternation in the tower if you request an early turnoff!).

A common characteristic of the light-twins is their inability to maintain altitude on one engine when gear and flaps are down. Of course this applies to many heavier and more powerful aircraft as well, so the UO-1 should not be condemned for this deficiency. With the left engine feathered and just the gear down the UO-1 will, as one pilot put it, "just about hold her own." The situation is not as critical as it sounds but the old landing rule of being a bit high and holding the gear until the runway is safely made is applicable to the UO-1, even though the cockpit is a busy place when it comes time to pump the gear down. If you consider that the airplane, landing from over a 50-foot obstacle, requires only about 1300 feet of runway it may be that the flaps will not be worth the extra effort.

Engine failure on takeoff, with not enough runway remaining to land, is in the same category as a waveoff from a single-engine approach. Primary cockpit concern is to "clean up." Here again with the left engine out, the cockpit is a busy place. Once the gear is retracted the UO-1 goes up a guaranteed 350 fpm at full gross. A waveoff after three to four hours of flying puts the sea-level single-engine rate of climb close to 500 fpm.

The enroute single-engine performance of the *Aztec* is a pleasant surprise. There is a substantial loss of speed, 35 to 40 knots, but the aircraft's reaction to the loss of one engine is almost one of indifference. With hands and feet off the controls, feathering an engine at cruise speed causes a lazy yaw and mild crab toward the dead engine. No immediate correction to maintain level flight is required. Slight rudder pressure and a minimum of aileron pressure holds directional control. A couple of turns on the rudder trim and a little nose-up elevator trim when the speeds bleeds off brings back hands-off flying.

Even with one engine out and the other at full power the aircraft can be climbed straight ahead using nothing but moderate foot pressure on the rudder pedal. Two or three turns on the rudder trim takes off even this pressure.

All this leads to one point: With the UO-1 it is foolish to hurry in deciding which engine to feather. The advantages of deliberate, sure action in the cockpit cannot be overemphasized; hasty action or confused thinking has resulted in too many cases where the wrong engine was feathered.

Since each engine has its own tachometer this instrument may be more helpful than the manifold pressure in determining which engine is out. In simulated failures the manifold pressure needle will sometimes lag or stick momentarily when the engine is throttled back rapidly. If feathering becomes impossible single-engine flight can be maintained with a wind-milling prop.

Single-engine ceiling at full gross is 7500′. At this altitude a small rate of climb of 50 fpm remains as an allowance for turbulence. Burning off fuel naturally increases the single-engine ceiling and after about two and a half hours it is up to 9500′.

Instrument flying in the UO-1 poses no problems but it would be a mistake to jump into actual IFR with a low approach at the other end without the benefits of a little hood time. It should not be considered a complex or demanding airplane but it does have peculiarities which require familiarization.

Here is one practice situation which gives considerable trouble. Try this hooded, with an imaginary ground level 6000 feet above the terrain; run a standard range approach down to low station with gear down and flaps up. Passing low station lower the flaps, then, at 400 feet above the imaginary ground level, add throttle for a missed approach. Immediately thereafter cut the left engine and continue the missed approach. Since the *Aztec* is designed for single-handed operation, try it that way.

You are guaranteed a lively time and the opportunity to practice will be appreciated by the time the plane is finally climbing under positive control. The difficulty will be comprised of a pitch trim change with flap actuation (pitch up when the flaps are lowered and pitch down when the flaps are raised) and the use of the hand hydraulic pump with the left engine feathered. The secret seems to be the sequence of cockpit action: power, then two or three quick turns of nose-up trim before starting the flaps up. Since the *Aztec* flaps are primarily drag, not lift devices, they should precede the landing gear at clean-up time.

Winter or cold weather will impose some operating restrictions on the *Aztec*. Pitot heat and electric prop anti-icers are provided, but there are no wing de-icers. The old rule of avoiding known icing is still as bright and shiny as ever. But even with shrewd planning it has been proven that there are times when the weather won't cooperate and you find ice which wasn't supposed to be there. The outside air temperature gage should have already given a tipoff for pitot heat and alternate air. There's plenty of heat for the carburetors—hot and very hot. Pulling the control to the first stop gives 100° air intake temperature. When you pull the controls all the way out, you get 200° plus.

Rule two is get out of the icing conditions. This is small comfort while waiting for clearance to a lower altitude. Civilian flight manuals issued with the *Aztec* don't mention the subject of how the airplane reacts to ice but all other light-twins display similar icing characteristics and the UO-1 is not likely to be much different. A considerable loss of airspeed, 35 to 45 knots, will be noticed with the first ice, and the loss may be quite rapid. This class of aircraft develops speed through strict aerodynamic cleanliness and the least bit of drag dirties the airframe to the point where there is simply insufficient horsepower available. Even with wing de-icers the ice which collects on antennas, unprotected areas and position lights is sufficient to cause the drop in airspeed.

After the initial loss, airspeed tends to stabilize and remain fairly constant. Civilian pilots flying light-twins in the Pacific Northwest have reported occasions where ¼ to ½ inches formed on the leading edges, then did not build any further.

None of these statements are intended to encourage the feeling that you can keep quiet and keep going. That would indeed be skating on thin ice. The thing to remember is that there is adequate time to start action for a lower altitude or a 180 turn.

The Navy is the last of the services to purchase a light-twin. Air Force experience with them dates back three years while the Army has operated light-twins for about eight years. This offers us a good chance to find out what words of experience and wisdom might be valuable to the UO-1 program.

Of all the previous flight hazards and misfortunes with military operated light-twins, one single lesson stands out: The step *down* from complex aircraft to the relatively simple models is equally as great as the step *up!* For the same model aircraft, many civil pilots have accidents because they know too little; military pilots because they expect too much.

The most attractive features of the *Aztec* were saved for last as dessert to sweeten up the ending. It is equipped with a directional heading autopilot, ADF and dual omni indicators (that ought to smooth out IFR departures a bit); it has both a cigaret lighter and ash trays, and, it has a glove compartment, all of which makes it number one Indian in the tribe. ●

SIGNALS CROSSED

SIGNALS CROSSED

AFTER a foul deck waveoff and a bolter, an FJ-4B pilot made a normal arrested landing, picking, up number 3 wire. On this particular occasion the whole air group was being recovered from a shore station. There was a natural emphasis on a reasonably close interval with expeditious taxiing to cross the foul deck line when coming out of the arresting gear. All aircraft were being clocked on this phase.

"I received a 'roll back' and a 'hook up' signal," said the pilot, "at which time I came on with full throttle. I then got a 'come ahead' at which time my power had taken effect and I began to move ahead quite rapidly . . . As always I began reducing my power and I looked up the deck and picked up the taxi director." The ship was pitching and rolling in seas with eight-foot waves and the pilot believed his forward momentum was increased by a roll of the ship.

As the FJ began to taxi there was no way to know that the pilot and flight deck personnel were concentrating on different objectives. To the pilot it seemed obvious. Up forward on the bow a cluster of parked FJ-4Bs were in sight. He had always been directed forward when leaving the arresting gear and the briefing had covered no other possibilities: One plus one equaled a parking spot at Fly One.

Flight deck personnel had other considerations in mind however. Forward of the landing area, parking space would be limited and it was necessary to send several FJs down the No. 3 elevator, abaft the island on the

starboard side. The accepted practice was to catch a long enough interval between aircraft, start the landed plane out of the gear, turn him 180 degrees and taxi him back to the elevator. Several FJs had already been spotted on the elevator and one more was to be sent there. The one taxiing forward would finish the job the flight deck people reasoned.

A clenched fist "hold right brake" was signaled by the plane director, followed in quick succession by a three finger sign to indicate the aircraft was to be spun aft to No. 3 elevator and finally a "pass on" to the aft elevator director was given. "I thought the pilot understood all the signals," the director said. He had an impression that the pilot acknowledged with a nod of his head.

Hindsight is always 20/20 vision. The pilot may have nodded but actually he was not acknowledging the No. 3 elevator signal. This was the first time the procedure was used with this particular squadron and group of pilots. The director was equally unaware of the pilot's lack of familiarity with the maneuver. Surprise over the signals was followed by confusion.

"The taxi director gave me a hold right brake," the pilot stated. He was still intent on proceeding forward. "I couldn't believe that he wanted me to lock the brake so I applied slightly more pressure to my right brake . . . " At this point both brakes were being used to slow his taxi speed. Thus the "hold brake" was misinterpreted for a "tap brake" signal, used to change or correct taxi course to clear the foul deck line. The FJ swung to the right but instead of a 180-degree turn it began a collision course toward the island. However a COD TF and a tractor were in the way so the FJ never reached it. Explained the pilot, "I had my power off and was standing on the brakes although the aircraft continued ahead at a slowing rate until it struck the tractor."

Though this accident was a simple and rather isolated breakdown in flight deck "communications," some omissions in procedures were brought to light. Until the accident such details as were added to the ship's SOP had not even been thought of as omissions. This in itself warrants interest from other squadrons and carriers as a preventive measure.

Firstly, if it is desired to taxi an airplane to the vicinity of the No. 3 elevator, the first signal the pilot receives from the director to indicate forward motion is a sweeping, turning and downward motion of the hand with three fingers extended, followed by a "come ahead" and "right turn" signal.

This sequence of signals alerts the pilot before he starts to move forward, of the intentions of the director and thereby allows him to adjust engine RPM, taxi speed, and turning rate to control the airplane safely and with the least loss of time.

During several landing evolutions this procedure was subsequently used with no further incidents and it appears to have reduced or eliminated the probability of confusion or signals for pilots and directors if they have been briefed on the meaning.

Secondly, the carrier's SOP now calls for briefing on the possibilities of such a recovery situation. The use of radio was tossed back and forth but was finally eliminated as a standard routine.

Consider the Risk

The question of just what discrepancies on an aircraft should be considered "safety of flight" gripes and cause to "down" the aircraft has long been a matter of discussion. No doubt this discussion will continue because individual opinions are bound to vary. However each pilot should carefully consider both the known and possible requirements of his flight prior to accepting an aircraft with known discrepancies.

Investigation of a recent fatal aircraft accident indicated that the pilot attempted a cross-country flight with his Tacan equipment, compass, and fuel transfer system inoperative. Obviously, this placed great additional demands upon the pilot even before takeoff.

Many modern aircraft are designed with multiple systems, one to back up the other in case of trouble; therefore the question of exactly which systems are considered primary flight systems is largely dependent upon the type aircraft and mission to be flown. Again however, careful consideration of the possible demands of the planned flight will often offer logical guidelines. A sound understanding of the aircraft's systems is as necessary to thorough flight planning as an adequate weather briefing.

Altogether too often personal pride plays a large role in deciding just what discrepancies a pilot will accept. With the advent of our more complex modern aircraft, the often quoted phrase, "I can handle it" is out of date. The professional pilot of today, with his aircraft's limitations and capabilities, and a sound flight plan before him has revised it to read, "Can I handle it?"

Weekly Summary (NASC)

Heavenly Rebuttal

A parked C-47 was recently damaged by a tornado at a Navy station. The incident report assessed the primary cause as "An Act of God." The subsequent paragraph stated, "Personnel offered opportunity for rebuttal; yes"!! We presume that this request for rebuttal was routed through the Chaplain's office.

That Feeling

IT WAS no junior birdman flying the FJ-4 as it sliced down through the bottom of the overcast and aimed for the runway—total pilot time: 3000 hours, total hours in the FJ: 250. The surface winds were calm with four miles visibility in rain showers. Then midway on final approach the pilot changed his mind about landing and waved off.

The airplane acted strange. A higher than normal approach speed at a low angle of attack was one suspicious item. A second item was the fact that even at higher speed the pilot felt the rudder shaker.

He was unable to figure out what might be happening so with a puzzled shake of the head he commenced a second approach. Calm winds and a wet runway made necessary an approach speed as low as possible but it was impossible to slow this thing down to within 10 knots of a normal speed. The FJ sailed in low over the threshold and touched down hot.

As it approached the field arresting gear the jet was sliding and skidding from hard brake pressure, which didn't seem to do much toward slowing the rollout, so to remove all doubt about stopping the pilot dropped the hook. Arrestment was successful but that is not quite the end of the episode.

No doubt the pilot was both perplexed and irritated as the crash crew set about untangling and unhooking his machine, that is until the cause of his trouble was discovered. Then no doubt his feelings changed to red-faced embarrassment.

The flaps had never been lowered.

This is a rare thing and with the aircraft feeling out of the ordinary the waveoff was good technique. However in analyzing the situation the tipoff was missed. The rudder shaker cutting in at higher than normal airspeed, accompanied by a low angle of attack reading called for another look at the landing checkoff list.

REVIEW AND REFRESH—After engine failure in an F8U, "the decision to eject was not difficult" said the pilot. "I had great confidence in the ejection system and knew that my chances of surviving a water ditching were poor indeed.

"In retrospect, I found that my last review of 'post-ejection' technique had been too long past, and tasks which should have been instinctive required some thought in carrying them out."

Standardize Your Rescue Signals

A recent accident brought to light a situation wherein air to ground signals were not standardized between pilot and ground crew. Information contained in the pilot's knee pad Emergency Procedures differed somewhat from that contained in NavAerOO-80R-14, revised 15 March 1959 (U. S. Navy Aircraft Fire Fighting and Rescue Manual). Because of misunderstanding, the crash crew was delayed in attempting to reach the scene of the crash.

To prevent a recurrence and to correct existing similar conditions, it is requested that activities use the standard air to ground signals set forth in NavAer OO-80R-14. (See Below)

4-78. Aircraft guidance is accomplished by:

a. Radio contact with control tower, or with convoy, as appropriate.

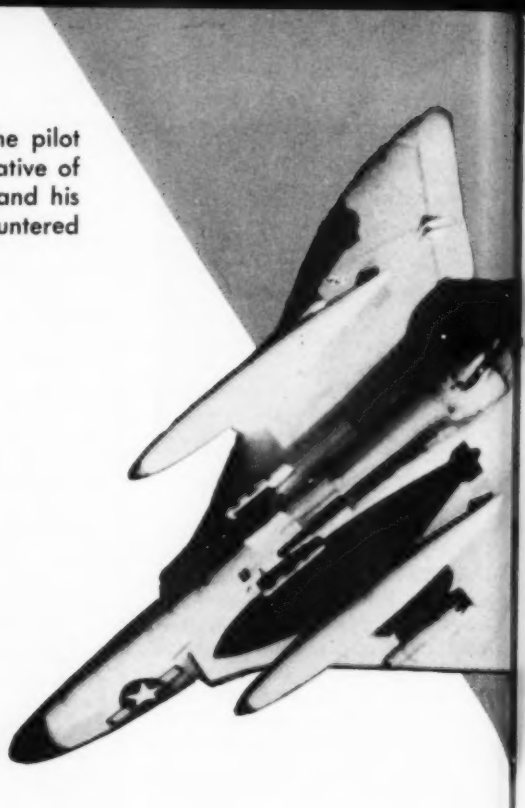
b. The following visual and audible signals:

Airplane Signal	*Meaning*
Jazzing engine (3 blips)	Follow me
Jazzing engine (3 blips) immediately followed by chandelle ending in direction of home airport	Go back to home airport
Short dives and zooms	Standard signal for yes
Fishtailing	Standard signal for no
Steep turn to the right	Turn right next road
Steep turn to the left	Turn left next road
Circling (left) or Dive (Pointing to crash scene)	Here is your stop
Engine cut full back	Stop; go by foot
Rocking wings from side to side, or green flashes on signaling lamp	Message received and understood
Making a complete right-hand circuit, or red flashes on signaling lamp	Message not understood

4-79. Pilot of liaison aircraft circles crashed aircraft when not directing crash trucks or convoy to the scene of the accident until relieved, fuel supply permitting.

When the F4D-1 went into a spin from which the pilot was unable to recover, he ejected. Here is his narrative of events just prior to and subsequent to his ejection and his description of the almost incredible difficulties encountered during parachute descent:

SPIN DRIFT



"I WAS being thrown around the cockpit a little more now and had the impression of spinning inverted due to negative G-forces. I seemed unable to focus on the instruments. I saw the altimeter go from 22,000 to 20,000 without seeing 21,000 pass. The aircraft was spinning tighter and with positive G-force again. I had a kind of detached feeling as one would have in a dream. I started to reach for the face curtain and found it extremely difficult to raise my arms. By pulling my arms in close to my chest, I was able to raise my hands up to my head. After momentary difficulty in finding the face curtain, I grasped it with both hands and just relaxed. The G-forces pulled my hands down and fired the ejection seat at approximately 18,000 feet.

"I felt the ejection seat fire. The actual ejection didn't seem too severe but it was followed immediately by a violent shock as the parachute opened. The opening shock didn't black me out, but I felt as though I was being crushed. I can remember hearing myself groan as the air was expelled from my lungs. Even after the opening shock, I felt as though I was being restrained by bonds. My arms and hands were numb and the muscles in my chest and back ached. I remember thinking vaguely the shock shouldn't have been that severe but that I was clear and had only to float down to the water.

"I thought about oxygen and reached for the green apple for the bailout bottle and pulled as hard as I could. I felt that I had put forth all the effort I could for the moment, so I relaxed for a couple of breaths. I then looked up at the parachute and was shocked to see that it was badly torn with the risers and shroud lines wound together and the chute itself collapsed. I got hold of one riser and pulled hand over hand for three times and had to let go because my arms were so weak. The whole mess looked hopelessly tangled."

(The Naval Parachute Unit examined the damaged parachute and came to the following conclusions: The parachute pack opened automatically. The parachutist had decelerated to a safe operational velocity for the parachute, but the damage occurred due to maldeployment that displaced four

lines over the canopy. The burn damage done by the lines resulted in tear damage to the canopy The lines were also weakened when travelling across the canopy so that they failed when the opening forces were encountered.)

"I knew my fall must be being retarded to some degree. I thought there might still be a chance for survival but I would need bouyancy when I hit the water, so I inflated one side of my mae west. I decided it would give me enough support without restricting too much the underwater plunge I expected. Then I became aware of my feet being fouled in something. When I looked down, I saw that my feet were in the middle of the uninflated pararaft.

"Somehow, in the opening shock, the survival kit and raft had come loose from the parachute pack. The pararaft was attached to my mae west by the lanyard and had stayed with me, but the survival kit portion that included the radio and other equipment had torn free and was gone. I decided to inflate the raft thinking I might not be able to do so after I hit the water. I pulled on the lanyard and kicked the raft free of my feet. It flew up and became wrapped around my face. I couldn't get it free immediately since my helmet and oxygen mask were restricting my movements. I had a fleeting thought about lack of oxygen but unfastened my mask and pushed the mask and helmet over my right shoulder. The mask hose connector was still attached to the parachute chest strap D-ring so the mask and helmet stayed with me, draped over my right shoulder. I worked the pararaft free from my face, found the inflation toggle and inflated the raft.

"I then turned my attention back to the parachute and tried to convince myself that the situation wasn't hopeless.

"I remember wondering which riser I should pull on in an attempt to straighten things out. For no particular reason, other than that it was the easiest one to reach, I started pulling on the left front riser. It was this riser that was connected by the shroudlines to the most severely damaged part of the parachute.

"I pulled the riser in until it was down to where the shroudlines attach. At this time, I felt a sudden, though slight, jolt and spun around as though unwinding in a swing with twisted ropes. I figured the chute had finally blossomed and since it had straightened itself out, it would be all right. My arms were very tired and my hands felt so weak that it was an effort to close them into a fist, so I let go of the riser. The parachute immediately collapsed. I grabbed the riser and began pulling it in again. As soon as I had the riser pulled down to where the shroudlines were attached, the parachute blossomed again. My hands were on a level with my chin and I placed my left hand through the shroudlines, crooked my wrist and placed my right hand on top of my left.

"In about 30 seconds, I felt as though I wouldn't be able to hang on. I thought if I straightened my left arm and continued to keep my wrist crooked, I would be able to hang on easier. I let go with my right hand and straightened out my left arm. The parachute collapsed again. Letting out just one foot of the length of the riser I had pulled in had made the difference.

"I brought my left hand back down to my chin, crossed my left hand with my right and the chute opened again. I could see that I was getting pretty low at this time so I just hung on. I thought about being dragged in the water by the chute, but discounted the possibility because I didn't think the parachute would hold enough air after I let go of the riser. At any rate, I was unable to get into the sling or unbuckle any of my straps.

"As I approached the water, I seemed to be making a track of about 45 degrees from the vertical. I hit the water going backward and went under and came up almost immediately. The parachute had collapsed, my mae west was supporting me, and the pararaft was floating close by still attached to my mae west by the lanyard.

"I let my arms rest at least a full minute and then unbuckled my parachute straps. I pulled the

SPIN DRIFT

pararaft over to me and partially under me before I discovered that my legs and feet were entangled in the shroudlines. I let go of the raft and untangled my legs. I then pulled the raft under me and rolled into it. I lay there in the raft for about three minutes before I realized LT—(the pilot of the second aircraft in the two-plane flight) was not flying over me.

"My hands and arms still felt numb and weak and I had some trouble tearing open a dye marker. I finally got the dye marker set out. I fired my first daylight smoke signal and waited. There was no response to the first signal, but I could hear and see planes about a mile to the north and turning away from me.

"About five minutes later, I saw three S2Fs passing about a mile away. I got my second smoke signal fired when I was in their two o'clock position. They flew on for about 30 seconds, then the lead plane turned toward me. By this time the dye marker had spread quite well. The S2F flew overhead. I settled back to await the pick up.

"At intervals while waiting for the helicopter, I bailed out the raft with my helmet. The water kept sloshing back in but the bailing helped keep me warm. By the time the helicopter arrived, I was pretty well chilled.

"When I saw the helicopter, I clipped a leg strap of the parachute to the raft, unfastened the raft lanyard from my mae west and rolled over the side, leaving my helmet in the raft.

"The helicopter pilot had a little trouble getting the sling to me because of minor communication difficulties with the sling man, but in about a minute, the sling reached me. I was a little slow getting into the sling properly and found myself in the air with the sling under my armpits from the front side. Aside from not being the prescribed method, the hoist into the helicopter was very satisfactory.

"I had been in the water about 30 minutes when I was picked up." ●

Nylon Letdown

ON A local test hop from a carrier an FJ-4B had engine seizure.

"The engine quit and I told my wingman I would have to get out," the pilot stated later. "I placed my feet in the stirrups and disconnected my oxygen fitting. The ship called and asked what my position was. I gave them my distance and bearing and then disconnected my radio leads and pulled the bailout bottle. At 10,000 feet and 150 knots with a slight nose-up attitude I reached up and pulled the curtain. The canopy blew off and then the seat ejected.

"The force of the seat ejection was not as bad as I had expected. I felt one tumble while separating from the seat. As I started to look for the D-ring, the parachute deployed with a moderate jerk. I looked up and saw the beautiful white canopy.

"Moving my body back in the parachute harness was no problem. I pulled on the leg straps and sat back in the harness. I then disconnected my leg straps and chest strap. My oxygen mask was still on and the visor of my hardhat was down. I use snap fittings for my oxygen mask (utilizing yoke suspension). When I disconnected the chest snap of the parachute, the strap on the oxygen mask became entangled in it. I wanted to get rid of the mask to keep from getting entangled in the parachute harness. Finally I freed it and threw it away. I looked down and still had my knee board with all the papers on it and threw it away along with some excess papers I had in my flight suit.

"Looking around I saw that I was above a large cloud layer and then noticed my aircraft making a slow spiral down. I also saw my wingman circling me. At this time, the parachute started to oscillate and using the method of pulling on the top risers I was able to stop this.

"Just before entering the overcast, I remembered I had to get the pararaft out. I disconnected the snap and tried to get the raft kit out. With much difficulty, I managed to get the raft about one-quarter of the way out. It was hard work. I then thought that if I pulled it the rest of the way out, the seat would not be as solid and perhaps bend and make it difficult to stay in the harness. I decided to leave it in.

"After coming out of the overcast, the parachute started to oscillate again and I had to pull continuously on the risers.

"Then I thought I heard a helicopter. I looked behind me and saw the ship headed for me about two miles away. I also noticed a greenish spot in the water where the aircraft had probably gone in. Then, off to my right and below me, I saw the helicopter. The helo was close enough for me to see the pilot; I waved at him and he waved back.

"Although I stayed in the harness until hitting the water, I knew exactly when I was about to enter it. I immediately raised my arms and was free of the parachute. The pararaft pulled out. I inflated my mae west and then saw the helicopter approaching me. Entering the helicopter rescue sling was no problem. I was lifted into the helicopter and was returned aboard the ship. I was only in the water about 20 seconds."

"It is gratifying to realize that the extensive survival training program in effect in naval aviation has again proven its worth," the AAR states. "Not only did all the survival equipment function properly in this case, but the pilot handled the emergency in a professional manner and obviously relied on ingrained habits developed through a background of survival training."

"Lt. _____'s account of his ejection and rescue reads like the pages out of the text book," the first endorsement on the AAR notes.

"It should be pointed out, however, that freeing of the paracraft from the seat probably could have been accomplished if the disconnecting of the leg and chest straps had been postponed until afterwards."

EAR PROTECTORS

ONE objection often given against the use of ear protectors is that they will prevent the hearing of essential communication or warning signals, but *that is not true.* In fact, if the noise level is high enough to make ear protectors necessary, their use will actually improve the reception of voice or other signals.

Try it in your own shop. Put the ends of your third fingers in your ears; it will give you just about the same noise protection as a good ear protector. If there is need for protection against noise, you will hear conversation or signals better with your fingers in your ears.—*2nd MAW "Hot Dope Sheet"*

Flotation Gear

DURING a 30-minute delay in takeoff because of repairs to a hydraulic leak, the pilot and dual pilot of an F9F-8T unstrapped and climbed out of the aircraft. At this time, the pilot took off his Mk II life vest; he forgot to put it back on when the aircraft was ready to go.

All went well until the engine flamed out at 2500 feet. After two unsuccessful attempts at an air-start, the pilot and copilot ejected through the canopy.

On entering the water, the pilot blew up his anti-G suit for flotation, then inflated his life raft and climbed in. He fired a day-smoke signal. Both he and the copilot were picked up shortly afterwards by helicopter.

On the subject of life vests, the pilot states, "Despite the fact that I had no trouble staying afloat without my life jacket in this case (bailout was under ideal weather conditions), I would highly recommend that all flotation gear be worn on all flights, no matter how routine." And from the dual pilot: "It took me over 17 years to need my survival gear but it was worthwhile carrying it all that time to have it when I needed it."

One-Cell Light

MAYBE the complacency of pilots who would fly at night without carrying a one-cell flashlight is limited to this squadron, a flight surgeon reporting on a recent accident states. But in case this complacency is more widespread, consider his comments in which he recommends that all pilots carry a one-cell light on night flights:

"The one-cell flashlight attached to the pilot's torso har-

ness (in the subject accident) was vital in assisting location and pickup of the downed pilot. This was the second pilot downed at sea at night in the past nine months in this squadron. Both were picked up promptly because of the one-cell light. The light is not standard with the integrated torso harness or the Mk-3C life vest; it must be attached locally. Although there is no promulgated group or fleet order that this be done," the flight surgeon continues, "it has been squadron policy to have the parachute loft sew an anchoring strap to the torso harness."

If you fly with the Mk-3C life vest, would you have a one-cell flashlight accessible if you needed it?

Cuts Way Out

AN S2F-1 hit the water while coming in too low on a carrier approach. The aircraft flipped over to an inverted position on impact and sank. The pilot and copilot were lost; the two crewmen survived with only minor injuries.

While exiting the aircraft, the radar operator became entangled in cable which he thinks was loose antenna wiring. He cut himself free with his survival knife.

Leakage

YOUR Mark V anti-exposure suit cannot function as designed if you don't zip the collar up.

An F4D pilot did not think to zip up his Mk V suit collar before takeoff, forgot to correct this before a low altitude ejection, and did not have time to do so during parachute descent. When he hit the water, he went under approximately 6 feet. Water leaked into his suit at the neck. Fortunately, he was picked up by destroyer before the 57° air temperature and 54° water temperature became dangerous to him.

Definition of Safety

. . . Our primary concern is not safety for safety's sake, but the acceleration of mission accomplishment through increased operational effectiveness. Therefore, let us define safety as "The product and integral part of an efficiently planned, supported, and executed mission."—*ADC Blueprint for Safety*

Injures Hand

THE wings of an F4D-1 had just been spread during completion of a pre-taxi check off. In direct violation of squadron line policy and safety briefings, the plane captain walked aft with his right hand on the top surface of the starboard wing to see if it was properly spread and locked. As the plane captain approached the elevon counter balance area on the forward side of the wing, the pilot deflected the elevons.

The plane captain's right hand was caught between the counter balance and the outer wing panel. This resulted in two broken bones in his hand. The injury kept him on the sick list for more than a month. The reporting flight surgeon recommends 1) continuous rebriefing on safety procedures and 2) plane-captain-to-pilot hand signals prior to control checks on line.

Neck Ring

A HUP-2 on plane guard duty struck the water under partial control in a tail-down attitude. The pilot and crewman escaped from the aircraft underwater, surfaced and inflated their life vests.

Both men had on Mk-4 anti-exposure suits. The crewman had all skin tight water seals; his anti-exposure suit did not leak. The pilot was wearing a neck ring in his anti-exposure suit which allowed his clothing under the suit to become saturated with water as he escaped from the aircraft. Fortunately both men were rescued by another helicopter in less than 10 minutes.

Wearing a neck ring in the Mk-4 anti-exposure is *not authorized*. By allowing water to get into the anti-exposure suit, the neck ring can completely destroy the protection the suit affords.

Anti-Exposure Suit Cuff

SHORTLY after a normal takeoff in an AD-5, the pilot reached forward to switch the oxygen regulator from 100% to normal. As he did so, the cuff of excess material on his Mk IV anti-exposure suit caught on the throttle control and caused a momentary overboost of the engine.

An inspection of anti-exposure suits in the command revealed that this condition existed in various degrees of severity in every case. Parachute riggers in the squadron then modified a Mk IV anti-exposure suit by removing the wrist seals, cutting off the excess material and recementing the wrist seals. Care was taken to insure that the sleeve was not cut so short that it would restrict movement of the wearer's arm.

The reporting command recommends that all commands conduct an inspection of Mk IV anti-exposure suits in their custody and modify them as necessary to eliminate the offending cuff of excess material.

MAINTENANCE GUIDELINES

To provide guidance for implementing, promoting and maintaining an effective accident prevention program ComFAir Whidbey has provided guidelines for conducting surveys to reduce accident potential conditions in all areas of aircraft operations and maintenance. The following is excerpted concerning aviation maintenance. Check this list for areas which might be improved within your organization.

1. Are adequate personnel and maintenance equipment available in accordance with applicable personnel and equipment allowances?
2. Are unqualified personnel being given on-the-job maintenance training?
3. Do key maintenance personnel attend and participate in aircraft accident prevention meetings?
4. Do maintenance personnel properly release aircraft for flight status? Is the appropriate entry made on Section B of the yellow sheet?
5. Are complete preflight inspections conducted when prescribed? Check preflight inspection form for completeness.
6. Are the Parts D and C of the yellow sheet completely and accurately filled in, and are they readily available to the pilot prior to flight so he may obtain accurate information on the status of the aircraft? Do pilots check previous discrepancy sheets prior to flight?
7. Do the pilots enter completely and accurately,

Properly filled out yellow sheets help insure prompt repair of discrepancies and return of the plane to service.

Do the aircraft inspection forms show that deficiencies are corrected promptly?

in Part B of the yellow sheet, all defects noted by the flight crew?

8. Are aircraft maintenance logs complete? Do the proper people know where they are without searching?

9. Has an adequate inspection system been established to insure proper performance of maintenance work?

10. When an unsafe condition, which may affect other aircraft is discovered, is prompt action taken to send out safety-of-flight messages and Amp-Furs?

11. Are FURs prepared properly and submitted promptly when required? Are they evaluated from the standpoint of safety in flight?

12. Are fuel servicing facilities marked to identify type of fuel? Are required inspections performed to assure delivery of uncontaminated fuel to aircraft?

13. Starting and engine run-up, taxiing and ground operation of aircraft:

a. Are only specified mechs and qualified pilots authorized to start and turn-up engines and taxi aircraft? OpNav 3710.7 is a list of proper signals used both day and night.

b. Are proper signals used both day and night?

c. Are fire guard and fire extinguishers posted?

d. Are ground auxiliary starting units placed at a proper distance from aircraft?

e. Are wheel chocks used?

f. Are warmup and taxi ramps kept clean?

g. Are "follow me" vehicles well lighted for night operation?

Continued

Need for Key Enlisted Maintenance Personnel Training

A REVIEW of the Naval Aviation Safety Center records for the 15-month period ending 31 March 1960 reveals 475 aircraft accidents and incidents where maintenance was a contributing factor.

According to the Maintenance Error Study now being distributed to our readers, the pattern of previous years continued at an increased rate during that period. The great majority of maintenance errors are not due to extreme equipment complexity or lack of a high degree of maintenance skill, but are attributable to the following:

a. Ineffective supervision and quality control.

b. Lack of basic maintenance knowledge of some personnel in the lower ratings.

c. Occasional unfamiliarity or inexperience in all rates with aircraft/equipment being maintained.

In view of the foregoing, and in order that increased emphasis be placed on the key enlisted maintenance personnel training programs now being conducted by certain squadrons and Carrier Air Group FOUR and by Heavy Attack Squadron THREE, ComNavAirLant stated "it appears desirable to accomplish the following:

"Establish the billet of 'Enlisted Maintenance Training Officer' within the organization of each squadron concerned and designate certain enlisted billets as instructor billets. It is envisioned, that these billets eventually will be under the direct detailing control of BuPers in order that properly qualified instructors may be assigned."

Are all applicable Changes and Bulletins promptly and properly incorporated?

Has an inspection system been set up to insure proper performance of maintenance work?

h. Are parking areas and taxiways free of maintenance equipment?

i. Are parking areas well defined and is there adequate clearance from taxiways and runways?

14. Are the provisions of ground safety maintenance and servicing of assigned aircraft being complied with? Are notices posted warning personnel about danger of propeller blast area and jet engine suction areas?

15. How often are aircraft fire extinguishers checked? Ground fire extinguishers? Check inspection tags and seals?

16. Are T.O.s and maintenance instructions up to date? Are T.O. and pertinent instructions which affect operation of aircraft posted in pilot's read-and-initial file? Are signatures up to date?

17. Is emergency equipment on all aircraft regularly checked by maintenance personnel?

18. Are aircraft decals and placards clean and readable and replaced when they become illegible? Have panel instruments been properly marked?

19. Do the aircraft inspection forms show that deficiencies are corrected promptly?

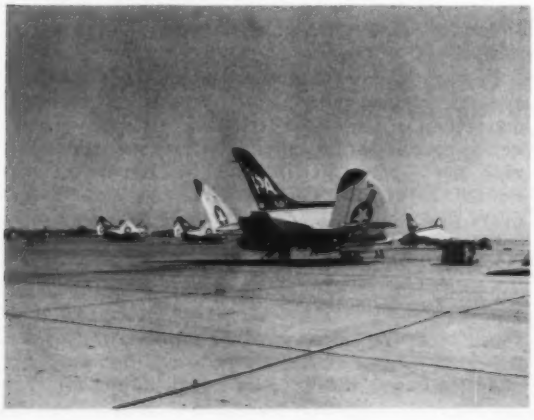
20. Are personnel encouraged to inform the Safety Officer or Maintenance Officer of near-accidents or hazards to flight which come to their attention?

21. Are personnel encouraged to write to Anymouse on unusual circumstances, in addition to submitting FURs?

22. Does the educational program provide maintenance personnel with information of conditions and difficulties at other bases maintaining similar equipment?

23. Is the "FUR Digest" immediately available to all key personnel? Is the "Digest" frequently

Are parking areas well defined and is there adequate clearance from taxiways and runways?



Cleanliness of aircraft interiors, exteriors and shop spaces is a vital part of the maintenance program.

Is on-the-job maintenance training being given the unqualified support of all personnel?

checked for items which might affect safety in flight?

24. Are measures in evidence to prevent foreign matter from entering jet air intakes during ground operations?

25. Are adequate tie-down facilities available?

26. Does the Aviation Safety or Survival Equipment Officer conduct additional training for enlisted personnel to insure thorough inspection of all emergency and survival equipment prior to receiving it for use?

27. Is a checklist used to insure complete inspection of all emergency equipment prior to every flight?

28. Are all applicable Bureau Bulletins, and Changes properly incorporated on aircraft? ●

Let's Talk Quality

One of the important factors that has made Naval Aviation great over the years is the excellent material condition of its aircraft. This has been made possible by the many serious and dedicated people, civilian and military, who work for the aviation industry. The confidence which pilots place in their aircraft in part reflects the ability of these people to design, manufacture, overhaul, and maintain aircraft so that they remain in top-notch material condition over extended periods.

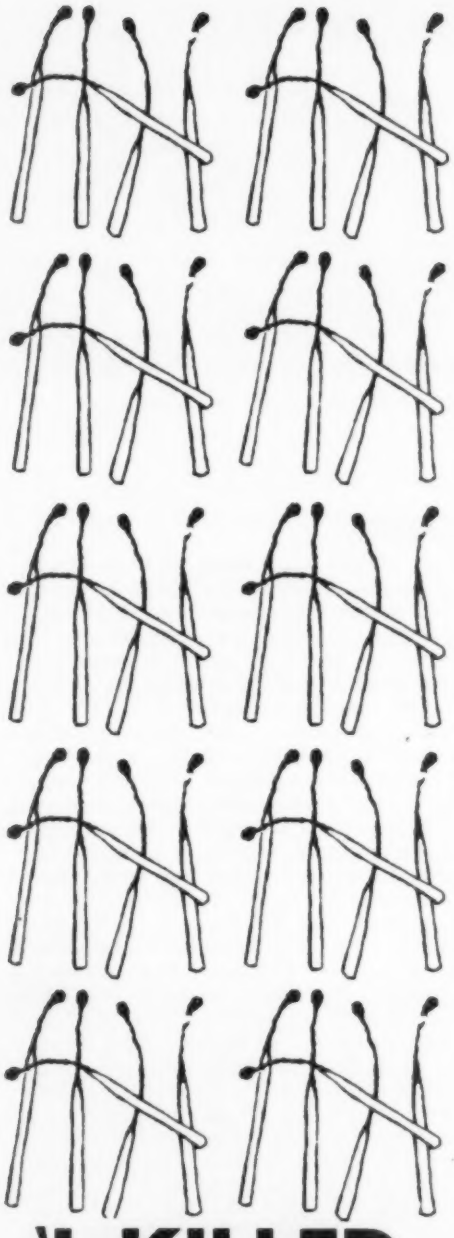
Occasionally, however, a person comes along who, even though he may be technically qualified, has either forgotten or refuses to assume the responsibility vested in and required of him to insure that the work for which he is responsible is done properly. As a result, his jobs are done in a lackadaisical manner and without the professional attention required.

Three typical cases which illustrate the results of this approach are given here to point up the hazards involved. An aircraft just received from the factory was severely damaged by a fire which resulted from a hydraulic leak caused by an inadequately torqued hydraulic fitting. In another case an aircraft just out of overhaul crashed on takeoff because the control cables had been reversed during installation. And finally, a report recently received cited a very lengthy list of discrepancies, many of a safety-of-flight nature, which were discovered on aircraft received for interim rework. In each of the above cases these aircraft supposedly received an inspection prior to being released, and as an indication that an inspection had been performed, various persons signed an inspection sheet, signifying that the aircraft was mechanically acceptable.

A man's signature affixed to any document is a statement that the man is ready to stand behind the things to which he has attested. The person who does not live up to the responsibilities vested in him and further perpetrates this by falsely signifying that he has honestly done his job is a person who cannot be retained in any organization, especially one involved in the field of aviation. Too many lives and dollars are at stake.

Therefore, it behooves each of us, whether in industry, or in the Navy, to first uphold our own personal integrity, and secondly not to tolerate those who do not consistently uphold their own. Persons assigned supervisory responsibilities must be alert to detect those who fail to meet the high standards required in every aviation function, and to take any required action to prevent loss of personnel and aircraft. We must consistently and positively know that when the goods, in this case naval aircraft, are signed, sealed, and delivered, they are ready to go in all respects.

—Weekly Summary



'I KILLED FIFTY MEN'

SOMEWHERE in the world today a worker does his daily chores blissfully, unaware that he is guilty of mass murder.

Even if he were known and caught, he would not be tried. Carelessness, in the legal sense of the word, is not a crime, but his thoughtlessness was just as lethal as if he had sprayed half a hundred men with a machine gun.

According to investigators probing the crash of a British transport that dived into the earth near London, killing 50 soccer players and the crew, a $2.00 pair of wire cutters caused the accident.

The cutters were left in the empennage of the aircraft. Instead of lying in some harmless spot, they worked themselves over a period of flights, into the vital horizontal stabilizer controls.

Did you ever leave metal shavings, tools, parts, in a fuel cell? Why? In a hurry to get out to the parking lot before the crowd? The Inspector will find them? We hope so.

The bolt hard to get in? Oh, leave it out. There are many bolts in that wing fitting anyway. Cover it up. Nobody will know. Potential man-slaughter.

Left some loose nuts in the J-box terminals? Didn't tighten the B-nut on the fuel line? Got in a hurry soldering those wires? Were you ever flying in an aircraft when it caught fire?

Every day, in every aircraft outfit, somebody may get careless and become a potential killer. Fortunately, fellow workers discover most of these botches before they cause trouble. But it's a pretty risky business gambling on somebody else to find your mistakes.

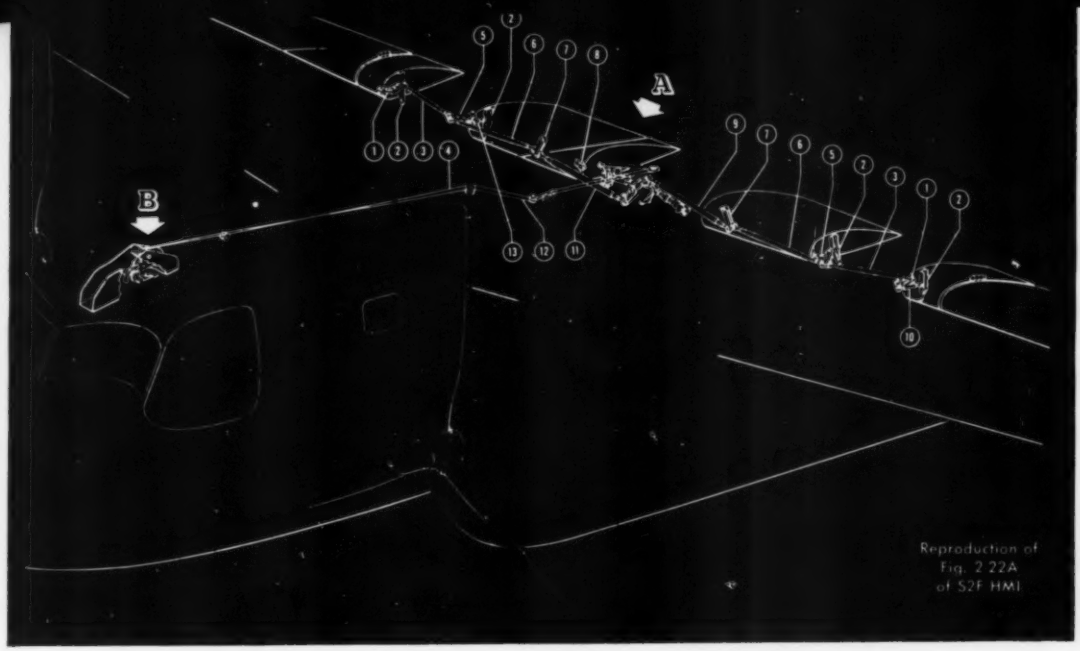
All of the plane, except the empennage, was destroyed in the crash. The cutters were found jammed in the controls, their prongs raised in a V-for-victory sign for carelessness, mute evidence of the reason for this needless death and destruction.

So what, we say, why make the exception the classic example of the rule? Aren't these planes inspected time and time again, during all stages of production and during their lifetime in service? Suppose some employee did goof? Why put all the blame on him?

True, sadly true. But the spectral fingers of 50 men, who enjoyed life, point out that just because others compounded or overlooked the error, doesn't excuse the original mistake one iota.

The overwhelming majority of you who do your jobs as though you or your son were going on the first test flight: "God bless you." Continue to be "thy brothers' keeper."

—Jack Murray, Lockheed Southern Star



MURPHY'S LAW*

In the original rigging of the S2F flap system, the small pushrods for the outboard flap panels (Item 10, page 151, fig 2-22A of the HMI) are adjusted for proper flap extension on each side. The two pushrods are identical parts, but when adjusted for their respective side (port or starboard), they may be different in length. Their location causes these pushrods and the connecting bolts to be exposed to the weather where corrosion can easily take place.

Generally, one is removed, cleaned and replaced before the other one is removed. However, in this case, two crews removed both pushrods at the same time for cleaning. They were then re-installed on the wrong flaps. The slight difference in pushrod length could not be detected by measurement of flap extension. Both panels were within tolerance. During a flight test, the aircraft displayed a definite rolling tendency, in this case to the left, when the flaps were lowered. In the full down position, a trim of 18 degrees right wing down was required to offset the roll tendency. This could, of course, cause critical flight conditions under certain configurations, i.e., single-engine with flaps down.

To prevent a recurrence of this mistake, personnel have been instructed to tag the pushrods when removing them to insure that they are re-installed correctly. —*Contributed by CO, VS-29*

A *Beechcraft* had just had a port wing change. A flight readiness inspection, a preflight inspection and a test flight by an experienced pilot were made. The *second* pilot to fly this aircraft after the fix noticed a left-wing-heavy condition; he cranked in right aileron trim and the condition became worse. Needless to say a situation like this tends to confuse a pilot. After landing, a ground inspection verified that the trim cable was crossed in the inboard wing stub section.

The crew leader had supervised the complete wing, aileron and flap change. The final hookup of the aileron tab was delayed for one week while waiting for a flex cable, which was installed upon receipt by a qualified man from the duty section. Prior to the test flight at least six people, including the line officer, inspected the aircraft wing for security, the aileron and flap for operation and alignment, and the trim tab *for movement*. However, no one noticed that the tab operated in *reverse*. It was learned later that the test pilot was unable to trim the plane properly on the test flight. This discrepancy was not noted on Part B of the Yellow Sheet.

There were a lot of people involved in this one. Fortunately all concerned lucked out, but it could have been disastrous had the error been discovered on a night IFR launch.—*Contributed anonymously*

*If an aircraft part can be installed incorrectly, someone will install it that way!

Wisdom consists not so much in knowing what to do in the ultimate as in knowing what to do next.

—Herbert Hoover

Heroic Fire-Fighter Receives Navy and Marine Corps Medal

READERS of FIRE PROTECTION, page 19 September issue of APPROACH will be interested in learning that the heroic firefighter mentioned in that article has received the Navy and Marine Corps Medal posthumously for his rescue of the fire-trapped pilot in the crashed S2F. Everett Bradbury, Jr., Airman Apprentice, died of burns received duing the rescue. The award was presented to his parents, Mr. and Mrs. Everett Bradbury of Fall River, Mass., on 4 August 1960, after press time on the September issue.

Letters

Pitch for Cleanliness

Sir:

For some years, the appearance of the personnel engaged in aircraft maintenance and their general slovenly housekeeping habits have greatly concerned me. I am enclosing a couple of photographs clipped from some aviation marketing periodicals. Note the clean uniforms of the maintenance personnel and the lack of litter and tools in the immediate vicinity.

After a stroll through any of our fleet hangars, the differences are readily apparent to a casual observer. They are, in fact, comparable to the differences between a country garage and a Cadillac agency in a big city.

. . . It is hard for me to understand how a man in filthy dirty clothing with general untidy habits can be expected to do a first class maintenance job. The two just don't go together. I recently went through a couple of shops that one of our departing squadrons had vacated. These had all the appearances of a second class cow barn.

CO MASTER JET BASE

Ditching References

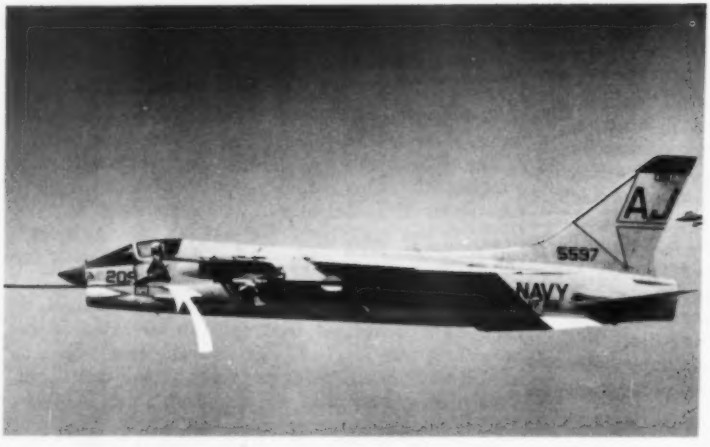
Sir:

I have just finished reading your article entitled "Ditching Landplanes" in the August, 1960 APPROACH. I thought it an excellent article. Having worked on the preparation of Aircraft Emergency Procedures Overwater and other works in the same field, I was particularly interested in your presentation. On page 19, may I suggest that under your list of recommended reading material, you might add the following viewing material:

- TF 1-5271a Ditching of Transport Aircraft—Communications, Sea Evaluation and Ditching
- TF 1-5271b Ditching of Transport Aircraft—Internal Preparation and Evacuation.

These should be available through the nearest Navy film library. Otherwise, they can be obtained from the USAF Film Library in St. Louis, Mo. While these films refer to transport ditchings, much of the material is applicable to any aircraft, and they should certainly be seen by any pilot flying over water.

JOHN M. WATER, JR., CDR, USCG
CO U. S. Coast Guard Air Station
Miami, Florida



Visor Down

Living proof why we brief to fly "visor down" during inflight refueling. Chances of the above happening are "good" and a slight whip of the drogue is all that remains for a broken canopy with a cockpit full of plexiglass from the implosion.—*O-in-C, VFP-62, Det. 42-60*

APPROACH welcomes letters from its readers. All letters should be signed though names will be withheld on request. Address: APPROACH Editor, U. S. Naval Aviation Safety Center, NAS Norfolk, Va. Views expressed are those of the writers and do not imply endorsement by the U.S. Naval Aviation Safety Center.

IMPROVEMENT OUTLOOK

One of the most lucrative fields of endeavor according to CNO is material reliability. Because only 15 per cent of all fiscal year 1960 accidents were solely pilot factor the real improvement *must* be in the material field. Good maintenance and reliability of material through material inspection is vitally essential for improvements in this area. Once a defect is discovered and its remedy determined prompt incorporation of the fix or change is an absolute necessity.

CNO AVIATION SAFETY AWARD WINNERS

ERS